TAPR Spread Spectrum Special Interest Group Archive, January 1998 through December 1999

January 1998 through December 1999

TAPR's technical forum for applying spread-spectrum communications to amateur packet-radio networking, including chipsets and modems, Part 15 wireless LAN hardware, direct-sequence and frequency-hopping systems, CDMA, interference, shared spectrum, and development projects.

This volume contains 22 original monthly files and 858 messages, arranged chronologically. The PDF is a readable access copy: MIME transfer encodings are decoded, HTML bodies are converted to plain text, and non-text attachments are represented by descriptive notes. The raw source text is supplied separately with the Internet Archive item.

Month	Messages	Original source file
1998-01	8	ss.9801
1998-03	2	ss.9803
1998-04	39	ss.9804
1998-05	22	ss.9805
1998-06	23	ss.9806
1998-07	8	ss.9807
1998-08	27	ss.9808
1998-09	152	ss.9809
1998-10	14	ss.9810
1998-11	31	ss.9811
1998-12	18	ss.9812
1999-01	51	ss.9901
1999-02	101	ss.9902
1999-03	22	ss.9903
1999-04	26	ss.9904
1999-05	53	ss.9905
1999-07	101	ss.9907
1999-08	26	ss.9908
1999-09	45	ss.9909
1999-10	33	ss.9910
1999-11	55	ss.9911
1999-12	1	ss.9912

January 1998

Original source file: ss.9801
Source: http://ftp.tapr.org/tapr_history/SIG_Archives/spread-spectrum-sig/mail_archive/ss.9801

1. Updated TAPR FHSS Radio Project web page

```
From: "Greg Jones, WD5IVD" <wd5ivd@tapr.org>
Date: Mon, 5 Jan 1998 00:33:26 -0600
To: " Spread Spectrum "<ss@tapr.org>
Message-ID: <v0313031eb0d62e47e79f@[206.138.226.65]>
Rendered body type: text/plain
```

I just updated the TAPR FHSS Radio Project web page
(http://www.tapr.org/ss) to include some photos from our meeting this past
weekend on Jan 2 and 3.

As of the meeting the CPU is operational and the memory (RAM and Flash) is
now being worked on and tested. In addition, progress is being made on the
RF board. You can see some photos of the VCOs operating.

Cheers - Greg

Greg Jones, WD5IVD
Austin, Texas
wd5ivd@tapr.org
http://www.tapr.org/~wd5ivd

2. Band Crowding

```
From: "Ron Cole" <rdcole@mindspring.com>
Date: Mon, 5 Jan 1998 02:10:19 -0600
To: <ss@tapr.org>
Message-ID: <000601bd19b1$5e1b5fc0$bac50b26@rdcole.mindspring.com>
Rendered body type: text/plain
```

I know that FHSS Radios are suposed to adapt to changing conditions but how
do they whey perform in a really crowded enviroment. Like say Seattle, Wa.
Where their is an operating 915 Mhz FHSS WAN system using neighorbhood
digiperates to create a Mesh Network covering Seattle Redmond Area.

I just can't remember the name of the system. I just read an article on it
in Last Months Linux Journal. When I was out their I remember that the
Radio/Modem was more than a modem but still under $200.

Ron Cole
N5HYH

-----Original Message-----
From: Greg Jones, WD5IVD <wd5ivd@tapr.org>
To: ss@tapr.org <ss@tapr.org>
Date: Monday, January 05, 1998 1:58 AM
Subject: [SS:1900] Updated TAPR FHSS Radio Project web page

>I just updated the TAPR FHSS Radio Project web page
>(http://www.tapr.org/ss) to include some photos from our meeting this past
>weekend on Jan 2 and 3.
>
>As of the meeting the CPU is operational and the memory (RAM and Flash) is
>now being worked on and tested. In addition, progress is being made on the
>RF board. You can see some photos of the VCOs operating.
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>Cheers - Greg
>
>-----
>Greg Jones, WD5IVD
>Austin, Texas
>wd5ivd@tapr.org
>http://www.tapr.org/~wd5ivd
>
>

3. Re: [SS:1901] Band Crowding

```
From: Bernie Doehner <bad@uhf.wireless.net>
Date: Mon, 5 Jan 1998 07:54:31 -0600 (CST)
To: ss@tapr.org
Message-ID: <Pine.BSF.3.96.980105075420.312B-100000@uhf.wireless.net>
```

Rendered body type: text/plain

Ricochet?

On Mon, 5 Jan 1998, Ron Cole wrote:

> Date: Mon, 5 Jan 1998 02:16:06 -0600 (CST)
> From: Ron Cole <rdcole@mindspring.com>
> Reply-To: ss@tapr.org
> To: ss@tapr.org
> Subject: [SS:1901] Band Crowding
>
> I know that FHSS Radios are suposed to adapt to changing conditions but how
> do they whey perform in a really crowded enviroment. Like say Seattle, Wa.
> Where their is an operating 915 Mhz FHSS WAN system using neighorbhood
> digiperates to create a Mesh Network covering Seattle Redmond Area.
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> I just can't remember the name of the system. I just read an article on it
> in Last Months Linux Journal. When I was out their I remember that the
> Radio/Modem was more than a modem but still under $200.
>
> Ron Cole
> N5HYH
>
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> To: ss@tapr.org <ss@tapr.org>
> Date: Monday, January 05, 1998 1:58 AM
> Subject: [SS:1900] Updated TAPR FHSS Radio Project web page
>
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> >now being worked on and tested. In addition, progress is being made on the
> >RF board. You can see some photos of the VCOs operating.
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> >Cheers - Greg
> >
> >-----
> >Greg Jones, WD5IVD
> >Austin, Texas
> >wd5ivd@tapr.org
> >http://www.tapr.org/~wd5ivd
> >
> >
>
>

4. Re: [SS:1901] Band Crowding

From: Steve Stroh N8GNJ <n8gnj@tapr.org>
Date: Mon, 05 Jan 1998 07:01:11 -0800
To: ss@tapr.org
Message-ID: <3.0.5.32.19980105070111.007f7330@tapr.org>
Rendered body type: text/plain

>From all accounts, the TAPR FHSS radio should interoperate well with the Ricochet FHSS networks that are operational in the Seattle, Washington DC, and San Francisco areas. Different FHSS systems seem, to me, particularly compatible because as long as they don't "land" on the same frequency when hopping, they "don't even know" the other system is "there". Several folks I've talked to have had several different SS systems operating in close proximity with no adverse effects.

Bottom line- we're eager to test the TAPR FHSS radio in the Seattle area, but we don't expect too much adverse reaction from the Ricochet system operating there. (At least I HOPE not... my Ricochet modem is operating a few feet from me and is my home's sole link to the Internet.)

On Ricochet pricing. The "reasonable" prices are somewhat misleading- if you buy a unit without Ricochet service, the price is much higher. The Ricochet SE modem is $400+, if memory serves.

Steve N8GNJ

At 02:16 1/5/98 -0600, you wrote:
>I know that FHSS Radios are suposed to adapt to changing conditions but how
>do they whey perform in a really crowded enviroment. Like say Seattle, Wa.
>Where their is an operating 915 Mhz FHSS WAN system using neighorbhood
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>N5HYH
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>>Cheers - Greg
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>>-----
>>Greg Jones, WD5IVD
>>Austin, Texas
>>wd5ivd@tapr.org
>>http://www.tapr.org/~wd5ivd
>>
>>
>
>
>

--
Steve Stroh N8GNJ
n8gnj@tapr.org

5. Re: [SS:1903] Re: Band Crowding

From: Phil Karn <karn@qualcomm.com>
Date: Mon, 5 Jan 1998 12:36:32 -0800 (PST)
To: ss@tapr.org
Cc: karn@servo.qualcomm.com
Message-ID: <m0xpJGC-000HUCC@laptop.ka9q.ampr.org>
Rendered body type: text/plain

>From all accounts, the TAPR FHSS radio should interoperate well with the
>Ricochet FHSS networks that are operational in the Seattle, Washington DC,

I assume you mean "coexist", not "interoperate". The latter term implies
that the TAPR and Metricom radios should actually talk to each other.
I don't think that's what you meant.

Phil

6. Re: [SS:1904] Re: Band Crowding

From: Steve Stroh N8GNJ <n8gnj@tapr.org>
Date: Mon, 05 Jan 1998 19:10:19 -0800
To: ss@tapr.org
Message-ID: <3.0.5.32.19980105191019.00816290@tapr.org>
Rendered body type: text/plain

Oops... Phil is correct- I did indeed mean coexist, not interoperate.

Thanks, Phil!

Steve N8GNJ

At 17:29 1/5/98 -0600, you wrote:
>>From all accounts, the TAPR FHSS radio should interoperate well with the
>>Ricochet FHSS networks that are operational in the Seattle, Washington DC,
>

>I assume you mean "coexist", not "interoperate". The latter term implies
>that the TAPR and Metricom radios should actually talk to each other.
>I don't think that's what you meant.
>
>Phil
>
>
>

7. RE: Protocols for SS Networks?

From: Darryl Smith <vk2tds@ozemail.com.au>
Date: Wed, 07 Jan 1998 19:48:06 +1100
To: ss@tapr.org
Message-ID: <34B34144.18F1FA80@ozemail.com.au>
Rendered body type: text/plain

Hi there...

When I was at the DCC I was a bit dissapointed at the protocols proposed for the
TAPR SS data radio. I know that this is only going to be release one and all that;
but I would like to work on something better.

What I have in mind is a distributed network with a lot of these radios acting as
masters talking to others - Sort of like what is happening with packet radio at
the time.

Does anyone have any ideas on protocols for such a design - apart from modifying
RSPF and combining it with slotted aloha..

Any help would be apprciated

Darryl VK2TDS
[Attachment: smime.p7s; application/x-pkcs7-signature; 4,258 bytes]

8. Re: [SS:1906] RE: Protocols for SS Networks?

From: noriton@netwk.ntt-at.co.jp (Norito NEMOTO)
Date: Sun, 11 Jan 1998 02:39:46 +0900 (JST)
To: ss@tapr.org
Message-ID: <199801101739.CAA23089@diamante.netwk.ntt-at.co.jp>
Rendered body type: text/plain

at <34B34144.18F1FA80@ozemail.com.au>
vk2tds@ozemail.com.au wrote
>> Hi there...

>> When I was at the DCC I was a bit dissapointed at the protocols proposed for the
>> TAPR SS data radio. I know that this is only going to be release one and all that;
>> but I would like to work on something better.
>>
>> What I have in mind is a distributed network with a lot of these radios acting as
>> masters talking to others - Sort of like what is happening with packet radio at
>> the time.

Umm

I (maybe many people) needed several point for packet radio!

Speed: about physical 800kbps and up (PtoP 100kbps up)
Useability: evrybody use system easy.
              BBS, chat, APRS, and TCP/IP
 (ex. BBS user need set only callsign, IP user set callsign and IP address)
              and power-on soon use

>> Does anyone have any ideas on protocols for such a design - apart from modifying
>> RSPF and combining it with slotted aloha..

I think difficult to use RSPF.

We must use Other routing protocol.

    3rd layer exchange by CALLSIGN, (because consider no-IP user)
    not use completely path, use pop by pop routing
                  (radio link status and topology often changed)
    choice small deley time path, not shortest (shortest path is not always best)
    all station same system(if there is base, who become base? who decide it?)

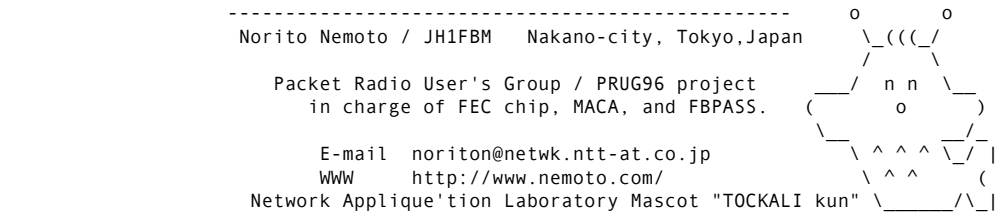
and think
    800kbps MSK or 808kbps SS physical modem (faster is better)
    hardware Vitabi FEC

used MACA, canceled hidden terminal.

>> Any help would be apprciated
>> Darryl VK2TDS

We made 808kbps wide area link system at 2.4GHz SS (alredy report 20km transfar).
Please expect next DCC, we are going to attend DCC meeting with many paper;-)
Of course, we welcome to discuss about this proposal.

Norito JH1FBM


Norito Nemoto / JH1FBM Nakano-city, Tokyo,Japan
Packet Radio User's Group / PRUG96 project
in charge of FEC chip, MACA, and FBPASS.
E-mail noriton@netwk.ntt-at.co.jp
WWW http://www.nemoto.com/
Network Applique'tion Laboratory Mascot "TOCKALI kun"

March 1998

Original source file: ss.9803
Source: http://ftp.tapr.org/tapr_history/SIG_Archives/spread-spectrum-sig/mail_archive/ss.9803

1. TAPR member published in SciAm

From: Jeff King <jeff@mich.com>
Date: Sat, 14 Mar 1998 12:20:51 -0500
To: ss@tapr.org
Message-ID: <3.0.5.32.19980314122051.03b53480@mail.mich.com>
Rendered body type: text/plain

On page 94 of this months Scientific America (April 1998) our own
Dewayne Hendricks has a article published describing Spread Spectrum.
Congrats to Dewayne.

Also of note in this issue of SciAm is the theme regarding Wireless
Technologies. Of particular interest to members of this group is the
article describing Terrestrial Wireless Networks by Alex Hill
of CMU (pg86).

While the article is broad reaching, Mr. Hill goes on to say
that CMU has a wireless network using over
100 Lucent Wavelan boards. Its not clear to me from the article if
he was able to bypass the need for the ATT "access points", but if
so, he has found a way to put together a inexpensive roaming wireless
network.

A good read this month.

-Jeff

2. Scientific American April 1998

From: "Lyle V. Johnson" <johnson@mmsi.com>
Date: Thu, 19 Mar 1998 08:29:06 -0700
To: ss@tapr.org
Cc: dewayne@warpspeed.com
Message-ID: <351139C2.B691ED12@mmsi.com>
Rendered body type: text/plain

In this issue is an excellent general-public-style introduction to
Spread Spectrum.

And one of the co-authors is none other than DeWayne Hendricks!

Congratulations, Dewayne!
--
Lyle Johnson   Modular Mining Systems, Inc.
VP Product Eng 3289 East Hemisphere Loop
                Tucson AZ 85706-5028
Voice: +1.520.746.9127
FAX: +1.520.889.5790
Internet: johnson@mmsi.com

April 1998

Original source file: ss.9804
Source: http://ftp.tapr.org/tapr_history/SIG_Archives/spread-spectrum-sig/mail_archive/ss.9804

1. Mailing List Woes

From: bm@lynx.ve3jf.ampr.org
Date: Sun, 12 Apr 1998 13:06:11 -0400 (EDT)
To: ss@tapr.org
Message-ID: <199804121706.NAA09566@lynx.ve3jf.ampr.org>
Rendered body type: text/plain

Dear TAPR Spread Spectrum mailing list subscribers:

At some point a few months back, for reasons unknown, the SS subscriber file got blown away. Since then, the only people on the list have been those who re-subscribed or started new subscriptions. I had hoped that a backup had been made as part of normal maintenance of the TAPR server, but it seems that none is available. So, I've taken the most recent copy of the subscriber list that I have from before the "incident", and merged it with the current post-incident subscriber list to resurrect the full list (this seems like an appropriate theme for Easter time!). I have spent quite a bit of time searching for and eliminating duplicates from the list, but I may have missed a few. I also may have restored a few people to the list who had previously unsubscribed. This is the best I can do with the information available to me. So, if you receive two copies of this message, or if you don't want to be on the SS list, just send a message to listserv@tapr.org with

unsub ss

as the first line of text. If you have a problem, drop me a note. And, if you want to talk about spread spectrum, use the list (ss@tapr.org) - that's what it's here for. Let's crank up some activity here again!

Barry

--
Barry McLarnon VE3JF/VA3TCP | Internet: bm@hydra.carleton.ca
Ottawa Amateur Radio Club | AMPRnet: bm@lynx.ve3jf.ampr.org
Packet Working Group | Web: http://hydra.carleton.ca

2. Scientific American

From: Lyle Johnson <lylej@azstarnet.com>
Date: Sun, 12 Apr 1998 13:15:38 -0700
To: ss@tapr.org
Message-ID: <3.0.5.32.19980412131538.008ce640@pop.azstarnet.com>
Rendered body type: text/plain

I sent this to the list quite some time back, but never saw it. Now, with the list back on line (thanks, Barry!)...

The April, 1998 issue of Scientific American has an excellent introductory article on Spread Spectrum (see pages 94-97).

One of the co-authors is none other than Dewayne Hendricks.

Excellent job, Dewayne!

73,

Lyle

3. Short Article on SS

From: Dewayne Hendricks <dewayne@warpspeed.com>
Date: Sun, 12 Apr 1998 15:19:41 -0700
To: ss@tapr.org
Message-ID: <v04011301b156ed75b87f@[192.168.1.3]>
Rendered body type: text/plain

I found this short article on SS in Andy Seybold's "Outlook" newsletter which is on-line at his website. Its called 'Reality vs Hype' and was written by Austin Lesea of the Larus Corp and appeared in the Jan. '98 issue. Find it at:

<http://www.outlook.com/articles/january98article1.html>

-- Dewayne

4. Re: [SS:1911] Scientific American

From: Jeff King <jeff@mich.com>
Date: Sun, 12 Apr 1998 18:33:38 -0400
To: ss@tapr.org
Message-ID: <3.0.5.32.19980412183338.03a71680@mail.mich.com>
Rendered body type: text/plain

At 03:21 PM 4/12/98 -0500, Lyle Johnson wrote:
>I sent this to the list quite some time back, but never saw it. Now, with
>the list back on line (thanks, Barry!)...

Ditto..

>
>The April, 1998 issue of Scientific American has an excellent introductory
>article on Spread Spectrum (see pages 94-97).

Also of note in this issue of SciAm is the theme regarding Wireless
Technologies. Of particular interest to members of this group is the
article describing Terrestrial Wireless Networks by Alex Hill
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While the article is broad reaching, Mr. Hill goes on to say
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he was able to bypass the need for the ATT "access points", but if
so, he has found a way to put together a inexpensive roaming wireless
network.

A good read this month. (I think its still on the newstands).

-Jeff wb8wka

| Jeff King   Aero Data Systems |
| jeff@mich.com P.O. Box 510895 |
| (248)471-1787 Livonia, MI 48151 |
|F(248)471-0279 United States |
----

5. Mystery Spread Spectrum Chip LP5140A

From: DSCHULTZ@SSSP.HST.NASA.GOV
Date: Tue, 14 Apr 1998 0:50:33 GMT
To: ss@tapr.org
Cc: DSCHULTZ@SSSP.HST.NASA.GOV
Message-ID: <980414005033.1716@SSSP.HST.NASA.GOV>
Rendered body type: text/plain

Some time ago at a hamfest I bought some sort of
914 MHz spread spectrum RF tracking device. The
device is trademarked "Proximity". The boards are
about 3 inches square. The digital board has an
87C51 microcontroller and a 68 pin PLCC chip
which is marked:
          LP5140A P102BA1 CHRONOS1.
Does anyone recognize this part number or is it
a secret house numbered chip?

Dan Schultz N8FGV

6. NPR Story on NSF Wireless Field Test Project

From: Dewayne Hendricks <dewayne@warpspeed.com>
Date: Tue, 14 Apr 1998 09:29:53 -0700
To: ss@tapr.org
Message-ID: <v04011338b1593f5531df@[192.168.1.3]>
Rendered body type: text/plain

On Monday, National Public Radio's "All Things Considered" program
ran a story on the NSF Wireless Field Test Project that I've been
associated with for the past three years. You can find the RealAudio
version of the story segment at:

                <http://www.npr.org/ramfiles/980413.atc.12.ram>

You can find out more about the project at our website at:

                        <http://wireless.oldcolo.com/>

-- Dewayne

7. Misdirected Mail

From: V S V Vajirapani <vaji@sri.lanka.net>
Date: Wed, 15 Apr 1998 12:05:42 +0500
To: ss@tapr.org
Message-ID: <2.2.32.19980415070542.00670bc4@mail2.lanka.net>
Rendered body type: text/plain

Sir, Many messages meant for you end up in my mailbox. I have told Lanka Internet about this some months ago but they still keep coming.

Please check about this
Rgds
Vaji.

8. [SS:1912] Short Article on SS

From: Dewayne Hendricks <dewayne@warpspeed.com> (by way of V S V Vajirapani <vaji@sri.lanka.net>)
Date: Wed, 15 Apr 1998 12:10:24 +0500
To: ss@tapr.org
Message-ID: <2.2.32.19980415071024.00683f2c@mail2.lanka.net>
Rendered body type: text/plain

I found this short article on SS in Andy Seybold's "Outlook" newsletter which is on-line at his website. Its called 'Reality vs Hype' and was written by Austin Lesea of the Larus Corp and appeared in the Jan. '98 issue. Find it at:

<http://www.outlook.com/articles/january98article1.html>

-- Dewayne

9. [SS:1911] Scientific American

From: Lyle Johnson <lylej@azstarnet.com> (by way of V S V Vajirapani <vaji@sri.lanka.net>)
Date: Wed, 15 Apr 1998 12:10:18 +0500
To: ss@tapr.org
Message-ID: <2.2.32.19980415071018.006806d0@mail2.lanka.net>
Rendered body type: text/plain

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One of the co-authors is none other than Dewayne Hendricks.

Excellent job, Dewayne!

73,

Lyle

10. [SS:1910] Mailing List Woes

From: bm@lynx.ve3jf.ampr.org (by way of V S V Vajirapani <vaji@sri.lanka.net>)
Date: Wed, 15 Apr 1998 12:10:07 +0500
To: ss@tapr.org
Message-ID: <2.2.32.19980415071007.00687d98@mail2.lanka.net>
Rendered body type: text/plain

Dear TAPR Spread Spectrum mailing list subscribers:

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away. Since then, the only people on the list have been those who re-subscribed or started
new subscriptions. I had hoped that a backup had been made as part of normal maintenance
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copy of the subscriber list that I have from before the "incident", and merged it with the
current post-incident subscriber list to resurrect the full list (this seems like an
appropriate theme for Easter time!). I have spent quite a bit of time searching for and
eliminating duplicates from the list, but I may have missed a few. I also may have

restored a few people to the list who had previously unsubscribed. This is
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listserv@tapr.org with

unsub ss

as the first line of text. If you have a problem, drop me a note. And, if
you want to
talk about spread spectrum, use the list (ss@tapr.org) - that's what it's
here for. Let's
crank up some activity here again!

Barry

--
  Barry McLarnon VE3JF/VA3TCP | Internet: bm@hydra.carleton.ca
  Ottawa Amateur Radio Club | AMPRnet: bm@lynx.ve3jf.ampr.org
  Packet Working Group | Web: http://hydra.carleton.ca

11. Reinvolvment.

From: "Mitchell, Ed C17" <mitchell@c17m.mdc.com>
Date: 15 Apr 1998 08:23:02 U
To: "Spread Spectrum" <ss@tapr.org>
Message-ID: <n1319493020.3301@c17m.mdc.com>
Rendered body type: text/plain

I need to get back up to speed on what is happening in ss, is there any chips
that now support ss? do the new cell phones do ss when in operation? has anyone
tried video yet. I hope to crank up a ss station soon and will be looking for
ideas. Thanks Ed mitchell KB6BFR

12. RE: 1915] SS digest 466

From: PHUA CHEE TECK <ECTPHUA@ntu.edu.sg>
Date: Thu, 16 Apr 1998 15:58:34 +0800
To: "'ss@tapr.org'" <ss@tapr.org>
Message-ID: <6665AC0C667ED11186E308002BB487E1EBF1A8@exchange2>
Rendered body type: text/plain

Hello,

I am interested in integrating the G3RUH modem and the HDLC protocol handler
into a DSP board, hopefully of recent family from Motorola (eg 56302) or
Texas Instrument (eg TM32C62X). Can anyone inform me of any work done in
this area where? I would sincerely like to communicate with anyone what has
experience in this. Thanks.

On reading the www.tapr.org web site, I managed to find some work done by
Vuori on the DSP56001. Can anyone guide me in downloading the G3RUH.asm
file?

Thanks and Hope to hear from you guys.

Thank you and Best Regards,
Chee Teck

> ----------
> From: ss@tapr.org[SMTP:ss@tapr.org]
> Reply To: ss@tapr.org
> Sent: 14 April 1998 10:27
> To: ss@tapr.org
> Subject: [SS:1915] SS digest 466
>
>   SS Digest 466
>
> Topics covered in this issue include:
>
>   1) Mystery Spread Spectrum Chip LP5140A
>   by DSCHULTZ@SSSP.HST.NASA.GOV
>   2) NPR Story on NSF Wireless Field Test Project
>   by Dewayne Hendricks <dewayne@warpspeed.com>
>
> --
>
> Date: Tue, 14 Apr 1998 0:50:33 GMT
> From: DSCHULTZ@SSSP.HST.NASA.GOV

> To: ss@tapr.org
> Subject: Mystery Spread Spectrum Chip LP5140A
> Message-ID: <980414005033.1716@SSSP.HST.NASA.GOV>
>
> Some time ago at a hamfest I bought some sort of
> 914 MHz spread spectrum RF tracking device. The
> device is trademarked "Proximity". The boards are
> about 3 inches square. The digital board has an
> 87C51 microcontroller and a 68 pin PLCC chip
> which is marked:
>   LP5140A P102BA1 CHRONOS1.
> Does anyone recognize this part number or is it
> a secret house numbered chip?
>
> Dan Schultz N8FGV
>
>
> ------------------------------
>
> Date: Tue, 14 Apr 1998 09:29:53 -0700
> From: Dewayne Hendricks <dewayne@warpspeed.com>
> To: ss@tapr.org
> Subject: NPR Story on NSF Wireless Field Test Project
> Message-ID: <v04011338b1593f5531df@[192.168.1.3]>
>
>
>   On Monday, National Public Radio's "All Things Considered" program
> ran a story on the NSF Wireless Field Test Project that I've been
> associated with for the past three years. You can find the RealAudio
> version of the story segment at:
>
>   <http://www.npr.org/ramfiles/980413.atc.12.ram>
>
> You can find out more about the project at our website at:
>
>   <http://wireless.oldcolo.com/>
>
> -- Dewayne
>
>
> ------------------------------
>
> End of SS Digest 466
> ********************
>

13. links

From: Ruben Salas Perez <rsp@coatepec.uaemex.mx>
Date: Thu, 16 Apr 1998 19:46:18 +0600 (GMT)
To: ss@tapr.org
Message-ID: <Pine.SOL.3.91.980416193654.294A-100000@coatepec.uaemex.mx>
Rendered body type: text/plain

Hi everyboby:
                My name is Rub□n Salas, I□m from M□xico, I□ve been
reading all your mails, and I□d like to make a question.
        Where can I found information About Spread Spectrum?
                I□m making my Tesis for gettingto my degree and I think
that Spread Spectrum is so interesting.
                Does anybody can help me?

        P.D.- In M□xico I can□t found books or literature about Spread Spectru

        Please Held me

14. Re: [SS:1921] RE: 1915] SS digest 466

From: Dennis Cahill <uy33383@pnauy.antel.com.uy>
Date: Fri, 17 Apr 1998 09:24:06 -0300
To: ss@tapr.org
Message-ID: <3.0.2.32.19980417092406.0079d8d0@pnauy.antel.com.uy>
Rendered body type: text/plain

For a dsp g3ruh modem check the dsp pages at tapr. There you can find
modems for the 56000 family.

Regards, Dennis, CX7AP.

15. [SS:1917] Short Article on SS

From: dewayn@kf9ug.#nin.in.usa.noam
Date: 15 Apr 98 06:46:00 GMT
To: ss@tapr.org
Message-ID: <62942dewayn@fwa.bbs>
Rendered body type: text/plain

R:980415/0646z @:KF9UG.#NIN.IN.USA.NOAM [EN71LD] #:44709 $:62942dewayn Z:46835

I found this short article on SS in Andy Seybold's "Outlook" newsletter which is on-line at his website. Its called 'Reality vs Hype' and was written by Austin Lesea of the Larus Corp and appeared in the Jan. '98 issue. Find it at:

<http://www.outlook.com/articles/january98article1.html>

-- Dewayne

16. [SS:1922] links

From: rsp@kf9ug.#nin.in.usa.noam
Date: 17 Apr 98 02:09:00 GMT
To: ss@tapr.org
Message-ID: <44731rsp@fwa.bbs>
Rendered body type: text/plain

R:980417/0209z @:KF9UG.#NIN.IN.USA.NOAM [EN71LD] #:45739 $:44731rsp Z:46835

=09Hi everyboby:
=09=09My name is Rub=E9n Salas, I=B4m from M=E9xico, I=B4ve been=20
reading all your mails, and I=B4d like to make a question.
=09Where can I found information About Spread Spectrum?
=09=09I=B4m making my Tesis for gettingto my degree and I think=20
that Spread Spectrum is so interesting.
=09=09Does anybody can help me?

=09P.D.- In M=E9xico I can=B4t found books or literature about Spread Spect=
ru

=09Please Held me

17. [SS:1916] Misdirected Mail

From: vaji@kf9ug.#nin.in.usa.noam
Date: 15 Apr 98 06:33:00 GMT
To: ss@tapr.org
Message-ID: <34044vaji@fwa.bbs>
Rendered body type: text/plain

R:980415/0633z @:KF9UG.#NIN.IN.USA.NOAM [EN71LD] #:44706 $:34044vaji Z:46835

Sir, Many messages meant for you end up in my mailbox. I have told Lanka Internet about this some months ago but they still keep coming.

Please check about this
Rgds
Vaji.

18. [SS:1915] NPR Story on NSF Wireless Field Test Project

From: dewayn@kf9ug.#nin.in.usa.noam
Date: 14 Apr 98 19:12:00 GMT
To: ss@tapr.org
Message-ID: <33642dewayn@fwa.bbs>
Rendered body type: text/plain

R:980414/1912z @:KF9UG.#NIN.IN.USA.NOAM [EN71LD] #:44379 $:33642dewayn Z:46835

On Monday, National Public Radio's "All Things Considered" program ran a story on the NSF Wireless Field Test Project that I've been associated with for the past three years. You can find the RealAudio version of the story segment at:

<http://www.npr.org/ramfiles/980413.atc.12.ram>

You can find out more about the project at our website at:

<http://wireless.oldcolo.com/>

-- Dewayne

19. [SS:1923] RE: 1915] SS digest 466

From: uy3338@kf9ug.#nin.in.usa.noam
Date: 17 Apr 98 19:10:00 GMT
To: ss@tapr.org
Message-ID: <41123uy3338@fwa.bbs>
Rendered body type: text/plain

R:980417/1910z @:KF9UG.#NIN.IN.USA.NOAM [EN71LD] #:46062 $:41123uy3338 Z:46835

For a dsp g3ruh modem check the dsp pages at tapr. There you can find
modems for the 56000 family.

Regards, Dennis, CX7AP.

20. [SS:1918] Scientific American

From: lylej@kf9ug.#nin.in.usa.noam
Date: 15 Apr 98 06:48:00 GMT
To: ss@tapr.org
Message-ID: <43474lylej@fwa.bbs>
Rendered body type: text/plain

R:980415/0648z @:KF9UG.#NIN.IN.USA.NOAM [EN71LD] #:44711 $:43474lylej Z:46835

I sent this to the list quite some time back, but never saw it. Now, with
the list back on line (thanks, Barry!)...

The April, 1998 issue of Scientific American has an excellent introductory
article on Spread Spectrum (see pages 94-97).

One of the co-authors is none other than Dewayne Hendricks.

Excellent job, Dewayne!

73,

Lyle

21. [SS:1919] Mailing List Woes

From: vaji@kf9ug.#nin.in.usa.noam
Date: 15 Apr 98 06:49:00 GMT
To: ss@tapr.org
Message-ID: <44759vaji@fwa.bbs>
Rendered body type: text/plain

R:980415/0649z @:KF9UG.#NIN.IN.USA.NOAM [EN71LD] #:44712 $:44759vaji Z:46835

Dear TAPR Spread Spectrum mailing list subscribers:

At some point a few months back, for reasons unknown, the SS subscriber file
got blown
away. Since then, the only people on the list have been those who
re-subscribed or started
new subscriptions. I had hoped that a backup had been made as part of
normal maintenance
of the TAPR server, but it seems that none is available. So, I've taken the
most recent
copy of the subscriber list that I have from before the "incident", and
merged it with the
current post-incident subscriber list to resurrect the full list (this seems
like an
appropriate theme for Easter time!). I have spent quite a bit of time
searching for and
eliminating duplicates from the list, but I may have missed a few. I also
may have
restored a few people to the list who had previously unsubscribed. This is
the best I can
do with the information available to me. So, if you receive two copies of
this message, or
if you don't want to be on the SS list, just send a message to
listserv@tapr.org with

unsub ss

as the first line of text. If you have a problem, drop me a note. And, if
you want to
talk about spread spectrum, use the list (ss@tapr.org) - that's what it's
here for. Let's
crank up some activity here again!

Barry

```
--
  Barry McLarnon  VE3JF/VA3TCP   |  Internet: bm@hydra.carleton.ca
  Ottawa Amateur Radio Club      |  AMPRnet:  bm@lynx.ve3jf.ampr.org
  Packet Working Group           |  Web:      http://hydra.carleton.ca
```

22. [SS:1921] RE: 1915] SS digest 466

```
From: ectphu@kf9ug.#nin.in.usa.noam
Date: 16 Apr 98 21:22:00 GMT
To: ss@tapr.org
Message-ID: <24888ectphu@fwa.bbs>
Rendered body type: text/plain
```

R:980416/2122z @:KF9UG.#NIN.IN.USA.NOAM [EN71LD] #:45454 $:24888ECTPHU Z:46835

Hello,

I am interested in integrating the G3RUH modem and the HDLC protocol handler into a DSP board, hopefully of recent family from Motorola (eg 56302) or Texas Instrument (eg TM32C62X). Can anyone inform me of any work done in this area where? I would sincerely like to communicate with anyone what has experience in this. Thanks.

On reading the www.tapr.org web site, I managed to find some work done by Vuori on the DSP56001. Can anyone guide me in downloading the G3RUH.asm file?

Thanks and Hope to hear from you guys.

Thank you and Best Regards,
Chee Teck

> ----------
> From: ss@tapr.org[SMTP:ss@tapr.org]
> Reply To: ss@tapr.org
> Sent: 14 April 1998 10:27
> To: ss@tapr.org
> Subject: [SS:1915] SS digest 466
>
>   SS Digest 466
>
> Topics covered in this issue include:
>
>   1) Mystery Spread Spectrum Chip LP5140A
>   by DSCHULTZ@SSSP.HST.NASA.GOV
>   2) NPR Story on NSF Wireless Field Test Project
>   by Dewayne Hendricks <dewayne@warpspeed.com>
>
> --
>
> Date: Tue, 14 Apr 1998 0:50:33 GMT
> From: DSCHULTZ@SSSP.HST.NASA.GOV
> To: ss@tapr.org
> Subject: Mystery Spread Spectrum Chip LP5140A
> Message-ID: <980414005033.1716@SSSP.HST.NASA.GOV>
>
> Some time ago at a hamfest I bought some sort of
> 914 MHz spread spectrum RF tracking device. The
> device is trademarked "Proximity". The boards are
> about 3 inches square. The digital board has an
> 87C51 microcontroller and a 68 pin PLCC chip
> which is marked:
>   LP5140A P102BA1 CHRONOS1.
> Does anyone recognize this part number or is it
> a secret house numbered chip?
>
> Dan Schultz N8FGV
>
>
> ------------------------------
>
> Date: Tue, 14 Apr 1998 09:29:53 -0700
> From: Dewayne Hendricks <dewayne@warpspeed.com>
> To: ss@tapr.org
> Subject: NPR Story on NSF Wireless Field Test Project
> Message-ID: <v04011338b1593f5531df@[192.168.1.3]>
>
>

> On Monday, National Public Radio's "All Things Considered" program
> ran a story on the NSF Wireless Field Test Project that I've been
> associated with for the past three years. You can find the RealAudio
> version of the story segment at:
>
> <http://www.npr.org/ramfiles/980413.atc.12.ram>
>
> You can find out more about the project at our website at:
>
> <http://wireless.oldcolo.com/>
>
> -- Dewayne
>
>
> ------------------------------
>
> End of SS Digest 466
> ********************
>

23. [SS:1920] Reinvolvment.

From: mitche@kf9ug.#nin.in.usa.noam
Date: 15 Apr 98 19:20:00 GMT
To: ss@tapr.org
Message-ID: <26109mitche@fwa.bbs>
Rendered body type: text/plain

R:980415/1920z @:KF9UG.#NIN.IN.USA.NOAM [EN71LD] #:44913 $:26109mitche Z:46835

I need to get back up to speed on what is happening in ss, is there any chips
that now support ss? do the new cell phones do ss when in operation? has anyone
tried video yet. I hope to crank up a ss station soon and will be looking for
ideas. Thanks Ed mitchell KB6BFR

24. [SS:1909] Scientific American April 1998

From: johnso@kf9ug.#nin.in.usa.noam
Date: 19 Mar 98 19:08:00 GMT
To: ss@tapr.org
Message-ID: <47871johnso@fwa.bbs>
Rendered body type: text/plain

R:980319/1908z @:KF9UG.#NIN.IN.USA.NOAM [EN71LD] #:28372 $:47871johnso Z:46835

In this issue is an excellent general-public-style introduction to
Spread Spectrum.

And one of the co-authors is none other than DeWayne Hendricks!

Congratulations, Dewayne!
--
Lyle Johnson Modular Mining Systems, Inc.
VP Product Eng 3289 East Hemisphere Loop
  Tucson AZ 85706-5028
Voice: +1.520.746.9127
FAX: +1.520.889.5790
Internet: johnson@mmsi.com

25. [SS:1914] Mystery Spread Spectrum Chip LP5140A

From: dschul@kf9ug.#nin.in.usa.noam
Date: 14 Apr 98 01:13:00 GMT
To: ss@tapr.org
Message-ID: <23165dschul@fwa.bbs>
Rendered body type: text/plain

R:980414/0113z @:KF9UG.#NIN.IN.USA.NOAM [EN71LD] #:44034 $:23165DSCHUL Z:46835

Some time ago at a hamfest I bought some sort of
914 MHz spread spectrum RF tracking device. The
device is trademarked "Proximity". The boards are
about 3 inches square. The digital board has an
87C51 microcontroller and a 68 pin PLCC chip
which is marked:
    LP5140A P102BA1 CHRONOS1.
Does anyone recognize this part number or is it
a secret house numbered chip?

Dan Schultz N8FGV

26. [SS:1913] Re: Scientific American

From: jeff@kf9ug.#nin.in.usa.noam
Date: 12 Apr 98 22:58:00 GMT
To: ss@tapr.org
Message-ID: <39766jeff@fwa.bbs>
Rendered body type: text/plain

R:980412/2258z @:KF9UG.#NIN.IN.USA.NOAM [EN71LD] #:43401 $:39766jeff Z:46835

At 03:21 PM 4/12/98 -0500, Lyle Johnson wrote:
>I sent this to the list quite some time back, but never saw it. Now, with
>the list back on line (thanks, Barry!)...

Ditto..

>
>The April, 1998 issue of Scientific American has an excellent introductory
>article on Spread Spectrum (see pages 94-97).

Also of note in this issue of SciAm is the theme regarding Wireless
Technologies. Of particular interest to members of this group is the
article describing Terrestrial Wireless Networks by Alex Hill
of CMU (pg86).

While the article is broad reaching, Mr. Hill goes on to say
that CMU has a wireless network using over
100 Lucent Wavelan boards. Its not clear to me from the article if
he was able to bypass the need for the ATT "access points", but if
so, he has found a way to put together a inexpensive roaming wireless
network.

A good read this month. (I think its still on the newstands).

-Jeff wb8wka


```
-------------------------------------
| Jeff King      Aero Data Systems |
| jeff@mich.com  P.O. Box 510895   |
| (248)471-1787  Livonia, MI 48151 |
|F(248)471-0279  United States     |
-------------------------------------
```


27. [SS:1908] TAPR member published in SciAm

From: jeff@kf9ug.#nin.in.usa.noam
Date: 15 Mar 98 01:30:00 GMT
To: ss@tapr.org
Message-ID: <34659jeff@fwa.bbs>
Rendered body type: text/plain

R:980315/0130z @:KF9UG.#NIN.IN.USA.NOAM [EN71LD] #:25671 $:34659jeff Z:46835

On page 94 of this months Scientific America (April 1998) our own
Dewayne Hendricks has a article published describing Spread Spectrum.
Congrats to Dewayne.

Also of note in this issue of SciAm is the theme regarding Wireless
Technologies. Of particular interest to members of this group is the
article describing Terrestrial Wireless Networks by Alex Hill
of CMU (pg86).

While the article is broad reaching, Mr. Hill goes on to say
that CMU has a wireless network using over
100 Lucent Wavelan boards. Its not clear to me from the article if
he was able to bypass the need for the ATT "access points", but if
so, he has found a way to put together a inexpensive roaming wireless
network.

A good read this month.

-Jeff

28. [SS:1912] Short Article on SS

From: dewayn@kf9ug.#nin.in.usa.noam
Date: 12 Apr 98 22:45:00 GMT
To: ss@tapr.org
Message-ID: <33290dewayn@fwa.bbs>
Rendered body type: text/plain

R:980412/2245z @:KF9UG.#NIN.IN.USA.NOAM [EN71LD] #:43388 $:33290dewayn Z:46835

I found this short article on SS in Andy Seybold's "Outlook" newsletter which is on-line at his website. Its called 'Reality vs Hype' and was written by Austin Lesea of the Larus Corp and appeared in the Jan. '98 issue. Find it at:

<http://www.outlook.com/articles/january98article1.html>

-- Dewayne

29. [SS:1911] Scientific American

From: lylej@kf9ug.#nin.in.usa.noam
Date: 12 Apr 98 20:43:00 GMT
To: ss@tapr.org
Message-ID: <30493lylej@fwa.bbs>
Rendered body type: text/plain

R:980412/2043z @:KF9UG.#NIN.IN.USA.NOAM [EN71LD] #:43326 $:30493lylej Z:46835

I sent this to the list quite some time back, but never saw it. Now, with the list back on line (thanks, Barry!)...

The April, 1998 issue of Scientific American has an excellent introductory article on Spread Spectrum (see pages 94-97).

One of the co-authors is none other than Dewayne Hendricks.

Excellent job, Dewayne!

73,

Lyle

30. [SS:1910] Mailing List Woes

From: bm@kf9ug.#nin.in.usa.noam
Date: 12 Apr 98 19:20:00 GMT
To: ss@tapr.org
Message-ID: <8898bm@fwa.bbs>
Rendered body type: text/plain

R:980412/1920z @:KF9UG.#NIN.IN.USA.NOAM [EN71LD] #:43289 $:8898bm Z:46835

Dear TAPR Spread Spectrum mailing list subscribers:

At some point a few months back, for reasons unknown, the SS subscriber file got blown away. Since then, the only people on the list have been those who re-subscribed or started new subscriptions. I had hoped that a backup had been made as part of normal maintenance of the TAPR server, but it seems that none is available. So, I've taken the most recent copy of the subscriber list that I have from before the "incident", and merged it with the current post-incident subscriber list to resurrect the full list (this seems like an appropriate theme for Easter time!). I have spent quite a bit of time searching for and eliminating duplicates from the list, but I may have missed a few. I also may have restored a few people to the list who had previously unsubscribed. This is the best I can do with the information available to me. So, if you receive two copies of this message, or if you don't want to be on the SS list, just send a message to listserv@tapr.org with

unsub ss

as the first line of text. If you have a problem, drop me a note. And, if you want to talk about spread spectrum, use the list (ss@tapr.org) - that's what it's here for. Let's crank up some activity here again!

Barry

--
Barry McLarnon VE3JF/VA3TCP | Internet: bm@hydra.carleton.ca
Ottawa Amateur Radio Club | AMPRnet: bm@lynx.ve3jf.ampr.org
Packet Working Group | Web: http://hydra.carleton.ca

31. Re: [SS:1914] Mystery Spread Spectrum Chip LP5140A

From: Dave Koberstein <davek@komacke.com>
Date: Mon, 20 Apr 1998 17:46:25 -0700
To: ss@tapr.org
Message-ID: <4.0.1.327.19980420174041.00dec450@mailhost.komacke.com>
Rendered body type: text/plain

Hi Dan,

It took me a little while to find out about this. I believe that chip is proprietary. I work at Proxim. However, the chip must be over 10 years old and I can't find anyone that knows any details about it.

Sorry.

Davek

At 07:52 PM 04/13/1998 -0500, you wrote:
>Some time ago at a hamfest I bought some sort of
>914 MHz spread spectrum RF tracking device. The
>device is trademarked "Proximity". The boards are
>about 3 inches square. The digital board has an
>87C51 microcontroller and a 68 pin PLCC chip
>which is marked:
>   LP5140A P102BA1 CHRONOS1.
>Does anyone recognize this part number or is it
>a secret house numbered chip?
>
>Dan Schultz N8FGV
>
> -------------------- End of Original ---------------------------------

_____
Dave Koberstein
  keep in touch: davek@komacke.com / www.komacke.com
  work: davek@proxim.com / www.proxim.com
  ham internet: n9dk@n9dk.ampr.org [44.4.12.172]
   (ax.25/PBBS: n9dk@w6yx.#nocal.ca.usa.noam)

32. Re: [SS:1939] Mailing List Woes

From: Mike Cummings <mgcummings@yahoo.com>
Date: Wed, 22 Apr 1998 13:51:07 -0700 (PDT)
To: ss@tapr.org
Message-ID: <19980422205107.14199.rocketmail@send1e.yahoomail.com>
Rendered body type: text/plain

I'm not sure but I think I'm getting two or three?! copies of all
messages.
I'm not totally sure because this is all new to me.
Thought I'd send a message and see if you can figure it out. thanks,

==

_____
DO YOU YAHOO!?
Get your free @yahoo.com address at http://mail.yahoo.com

33. Re: [SS:1941] Re: Mailing List Woes

From: Greg <greg@telvex.com>
Date: Wed, 22 Apr 1998 15:32:38 -0700
To: ss@tapr.org
Message-ID: <353E7005.8D86EED7@telvex.com>
Rendered body type: text/plain

Yes the mailing list server does seem to be sending out duplicate messages

Mike Cummings wrote:

> I'm not sure but I think I'm getting two or three?! copies of all
> messages.
> I'm not totally sure because this is all new to me.
> Thought I'd send a message and see if you can figure it out. thanks,
>
> ==
>
> _____
> DO YOU YAHOO!?
> Get your free @yahoo.com address at http://mail.yahoo.com
[Attachment: vcard.vcf; text/x-vcard; 306 bytes]

34. Re: [SS:1941] Re: Mailing List Woes

From: RLANIER@mailb.harris.com (RLANIER)
Date: Wed, 22 Apr 1998 18:05:22 -0400
To: ss@tapr.org
Message-ID: <000F2FB5.1702@mailb.harris.com>
Rendered body type: text/plain

I'm getting the SAME THING!

Tony KE4ATO

_____ Reply Separator _____
Subject: [SS:1941] Re: Mailing List Woes
Author: ss@tapr.org at smtp
Date: 4/22/98 3:56 PM

I'm not sure but I think I'm getting two or three?! copies of all
messages.
I'm not totally sure because this is all new to me.
Thought I'd send a message and see if you can figure it out. thanks,

==

_____
DO YOU YAHOO!?
Get your free @yahoo.com address at http://mail.yahoo.com

35. Re: [SS:1943] Re: Mailing List Woes

From: "Greg Jones, WD5IVD" <wd5ivd@tapr.org>
Date: Wed, 22 Apr 1998 20:01:45 -0500
To: ss@tapr.org
Message-ID: <v04003a05b164435d69da@[207.8.125.50]>
Rendered body type: text/plain

Actually it isn't the list itself.

Someone started reposting messages that had already been posted. This has
been stopped I think.

Greg

>   I'm getting the SAME THING!
>
>
>   Tony KE4ATO
>
>
>_____ Reply Separator
>_____
>Subject: [SS:1941] Re: Mailing List Woes
>Author: ss@tapr.org at smtp
>Date: 4/22/98 3:56 PM
>
>
>I'm not sure but I think I'm getting two or three?! copies of all
>messages.
>I'm not totally sure because this is all new to me.
>Thought I'd send a message and see if you can figure it out. thanks,
>
>
>
>
>
>
>
>==
>
>_____
>DO YOU YAHOO!?
>Get your free @yahoo.com address at http://mail.yahoo.com

```
-----
Greg Jones, WD5IVD                 Austin, Texas
wd5ivd@tapr.org      http://www.tapr.org/~wd5ivd


Boren's Laws:
        (1) When in charge, ponder.
        (2) When in trouble, delegate.
        (3) When in doubt, mumble.
```

36. Distance Limitations w/ SS

```
From: System Administrator <Admin@environ1.ietravel.com>
Date: Thu, 23 Apr 1998 17:43:30 -0500
To: ss@tapr.org
Message-ID: <s53f7dcd.000@environ1.ietravel.com>
Rendered body type: text/plain
```

Greetings All,

I am a newbie to the SS list and SS in general; been lurking about two weeks now. Ironically, what sparked my interest in the first place was the Scientific American article referred to in recent postings. It could prove to be the answer to a scenario I've been investigating recently.

a couple of general questions please :

1. Given the current technology, what is the best range one could achieve (within the 2+ GHz band ?) using non-line-of-site (omnidirectional ?). I would like to achieve 1 - 2 Mbit/sec data rate. Assume no RF holes or enough transceivers to take care of them. I've seen widely varying figures

2. Who are the top manufacturers of equipment for above scenario. (URLs if ya got em)

Any info is greatly appreciated !

Vincent Cirel
Director of Information Services
International Expeditions, Inc.
vincent@ietravel.com
(205) 428-1700

37. Re: [SS:1945] Distance Limitations w/ SS

```
From: Katsuhiko MOROSAWA <jh0mrp@dl.hlb.casio.co.jp>
Date: Fri, 24 Apr 1998 09:35:07 +0900 (JST)
To: ss@tapr.org
Message-ID: <353FDE3A262.DEC0JH0MRP@smtp.dl.hlb.casio.co.jp>
Rendered body type: text/plain
```

On Thu, 23 Apr 1998 17:47:34 -0500 (CDT)
System Administrator <Admin@environ1.ietravel.com> wrote:

>1. Given the current technology, what is the best range one could achieve
>   (within the 2+ GHz band ?) using non-line-of-site (omnidirectional ?). I would
>   like to achieve 1 - 2 Mbit/sec data rate. Assume no RF holes or enough
>   transceivers to take care of them. I've seen widely varying figures
>
>2. Who are the top manufacturers of equipment for above scenario. (URLs if ya got em)
>
>Any info is greatly appreciated !

I'm not sure wheter it's the top or not, however,
you may be interest in:
        http://www.drug.prug.or.jp/

--
Katsuhiko "Kay" MOROSAWA (JH0MRP, 7K1NCP)
http://www2s.biglobe.ne.jp/~jh0mrp/

38. Distance Limitations

```
From: Glenn Elmore <ge@hpsadr2.sr.hp.com>
Date: Fri, 24 Apr 1998 15:07:00 -0800 (PDT)
To: ss@tapr.org (ge)
Message-ID: <199804242207.AA065105621@hpsadr2.sr.hp.com>
Rendered body type: text/plain
```

Vincent Cirel asked:

> 1. Given the current technology, what is the best range one could achieve
>   (within the 2+ GHz band ?) using non-line-of-site (omnidirectional ?). I would
>   like to achieve 1 - 2 Mbit/sec data rate. Assume no RF holes or enough
>   transceivers to take care of them. I've seen widely varying figures

You ask what is, in my estimation, a very important, interesting and
difficult question.

While most of my experimenting has skirted 2 GHz; quite a lot at .9 and
1.3 GHz on the low side and 10 GHz on the high side, I believe my
experiences are relevant.

I think the single most important part of your question revolves around
what you mean by non-line-of-sight. There are secondary issues like
"how much directivity", what sort of modulation/encoding/FEC/spreading
and how much transmit power but they are all pretty secondary.

>From my experiences with 230-500 kbps systems at 900 MHz and ~2 Mbps
systems at 10 GHz along with my narrowband experieces throughout the
uhf-microwave range I would suggest that the answer to your first
question can vary by up to several *orders of magnitude* depending upon
the nature and quality of the path(s).

40-60 dB of additional degradation due to non-LOS paths obstructed only
by trees, foliage and man-made structures but not by intervening earth
is quite common at 900 MHz. Even more than this is commonly seen
depending on the specific situation. This translates to a factor of
100 to 1000 times reduction in distance.

For some discussion, measurements I've made and a description of an
operating system which experiences some of these impediments
see:

 http://www.tapr.org/~n6gn/dcc/problem.html

Glenn Elmore n6gn

39. e-mail address

From: "Mitchell, Ed C17" <mitchell@c17m.mdc.com>
Date: 28 Apr 1998 14:37:29 U
To: " Spike " <ESpike007@earthlink.net>, "ACS" <acs@aol.com>,
"admin" <listserv@tapr.org>, "Adobe" <dvi@adobe.com>,
"Al Jackson(motorola)" <al_jackson@email.sps.mot.com>,
AMELINO.SANDRA_L@LONG-BEACH.VA.GOV, "Arielal@UCI" <astern@uci.edu>,
"astrotronics" <astrotronics@redlands.net>,
"Bill Cockey" <bcockey@f-s.com>, "Bill Fitagerald" <buddyfitz@aol.com>,
"Bittel, Doug" <Doug.Bittel@analog.com>, BumbleB22@aol.com,
"Charles Axel Allen" <caallen@webmethods.com>,
"Charles Schmid" <NTHM36A@prodgy.com>,
"Chris Clark(photobit)" <cclark@photobit.com>,
"Chris Good" <cw3chris@aol.com>,
"Dave Rosenthal" <N6TST@ridgecrest.ca.us>,
"David Rosenthal" <n6tst@ridgecrest.ca.us>,
"Dick Ertman" <dickertman@juno.com>,
"Dik Ertman" <dickertman@juno.com>, "DMAMUSE" <MUSE@nima.mil>,
"Don Hill(tech)" <don@techelectronicsys.com>,
"Don Jordan" <donjordan@hotmail.com>, "Don Pendry" <dpendry@telis.org>,
"donjordan" <donjordan@hotmail.com>,
"Doug Bittel(analog)" <Doug.Bittel@analog.com>,
"Dr. Phil Bos" <pbos@kent.edu>,
"Drew Glista (Navy)" <glistaas.nimitz@navair.navy.mil>,
"DVI" <dvi@adobe.com>, dvi@adobe.com,
"e-mail account" <tapr-mail@tapr.org>, "ed" <ed#m#mitchell@boeing.com>,
"ed mitchell" <ed.mitchell@boeing.com>, "Elise" <elise0511@aol.com>,
ghelsel/r5_fire@fs.fed.us, "Greg Helsel" <ghelsel/r5_fire@fs.fed.us>,
"Heid, Michael" <heidm@hydroaire.com>,
"home" <cmitchell@relaypoint.net>, "Jgibson111" <Jgibson111@aol.com>,
Jgibson111@aol.com, "John Desrosiers" <jdesrosi@jjprayc1.jnj.com>,
"John Dudd (Allied Signal)" <john.dudd@alliedsignal.com>,
"Jon Gibson" <gib_gibson@msn.com>,
"Keith Ellis" <keith@webmethods.com>,
"Konop, James L" <James.Konop@PSS.Boeing.com>,
"Laura Blackwell" <Laura.Blackwell@trw.com>,
"leonard" <cone92736@aol.com>,
"Leonard Monk" <MONK-LM@wsmcpo.redstone.army.mil>
Message-ID: <n1318347783.57528@c17m.mdc.com>

Rendered body type: text/plain

This address will be down for a few days, please send all e-mail to my home address of <cmitchell@relaypoint.net> The MAC system is being changed! Ed.

May 1998

Original source file: ss.9805
Source: http://ftp.tapr.org/tapr_history/SIG_Archives/spread-spectrum-sig/mail_archive/ss.9805

1. Dayton 1998 TAPR Digital Forum and Pack*Bash

```
From: "Greg Jones, WD5IVD" <wd5ivd@tapr.org>
Date: Sat, 2 May 1998 10:54:47 -0500
To: "HF SIG  list   mailing"<hfsig@tapr.org>, " Spread Spectrum "<ss@tapr.org>,
        " TAPR/AMSAT DSP "<dsp@tapr.org>,
        "APRS SIG  list   mailing"<aprssig@tapr.org>,
        "NETSIG  list   mailing"<netsig@tapr.org>,
        "BBS SIG  list   mailing"<bbssig@tapr.org>,
        " tacgps "<tacgps@tapr.org>, aprsnews@tapr.org, mic-e@tapr.org,
        TAPR Regional Freq <regional_freq@tapr.org>
Message-ID: <v04003a02b170efeb4e04@[207.8.125.50]>
Rendered body type: text/plain
```

Dayton 1998 TAPR Digital Forum and PACK*BASH

Dayton Hamvention will be here later this month. Just as a reminder, the
TAPR Digital Forum is on Friday and this year starts much earlier than in
years past. In addition, the PacketBASH banquet will be held on Friday
night.

If you haven't been to Dayton before, you should think about coming this
year. The dates for this year are May 15th - 17th. Check out the web page
http://www.tapr.org/tapr/html/dayton.html for any last minute changes in
the schedule.

The schedule for the TAPR digital forum on Friday is:

10:00 - 10:05am (5 min)
        Introduction to Forum
        John Ackermann, N8UR

10:05 - 10:25am (20 min)
        TAPR Kit/Project/Organizational Update - Greg Jones , WD5IVD
        TAPR Update and discussion on current activities.

10:25 - 10:45am (20 min)
        Regulatory Issues - Dewayne Hendricks, WA8DZP
        Update on Regulatory Issues related to Digital activity.

10:45 - 11:30am (45 min)
        TAPR 900Mhz FHSS Radio Project
        Tom McDermott, N5EG / Greg Jones, WD5IVD
        Latest Information on Status and design of 900Mhz FHSS Radio Design.

11:30 - 12:15pm (45 min)
        GPS Projects - Steve Bible, N7HPR / Tom Clark, W3IWI
        TAPR has introduced several GPS related items in the last year.
        DGPS, GPS Interface boards, TAC-2, Future TOC add-on, etc

12:15 - 12:30pm (15 min)
        Break

12:30 - 1:00pm (30 min)
        Linux AX.25 - John Ackermann, N8UR
        Making AX.25 play on Linux

1:00pm - 1:45pm (60 min)
        APRS SIG and APRS Update
        Stan Horzepa, WA1LOU, APRS SIG Chair with the APRS Authors
        SIG meeting discussing current and future activities in APRS.

PACK*BASH and TAPR Banquet

Attending the 1998 Dayton Hamvention? Then don't miss out on PACK*BASH and
TAPR Banquet.

What?
        An event for the digitally-inclined ham, featuring:
                * Buffet dinner

```
                *  Speaker Doug McKinney, KC3RL
                      discussing GPS and his Bouy projects in the Pacific
                *  TAPR special interest group meetings
                *  Prize Drawing!

        When?
                Friday evening, May 15, 1998
                Doors open at 7:00 pm; dinner served at 7:30 pm
                Speaker and meetings after dinner


        Where?
                NCR "Sugarcamp" Conference Center, 101 W. Schantz Ave. --
                South of downtown Dayton, just west of Main St. (Rt 48).
                Maps available on the TAPR web site or at the TAPR booth.
                (http://www.tapr.org/tapr/html/dayton.html)


        How?
                Dinner requires advance registration and payment through TAPR.
                Tickets will be available at the TAPR booth on Friday, though
                we strongly encourage registration <before> Hamvention.  The cost
                is $20.00 per person, tax and tip included.

                All amateurs are welcome to attend, enjoy the speaker, and
                participate in the meetings, although only those purchasing a
                dinner can eat.

                To register, contact:
                        PACK*BASH
                        c/o TAPR
                        8987-309 E. Tanque Verde Road #337
                        Tucson, AZ   85749-9399

                        Phone: (940) 383-0000
                        Fax: (940) 566-2544
                        Internet: tapr@tapr.org

                        Visa/Mastercard Accepted

        Who?
                PACK*BASH is co-sponsored by TAPR -- Tucson Amateur Packet
                Radio, the national leader in digital communication -- and the
                Miami Valley FM Association, Dayton's packet radio club.

        For more information (including maps), go to
        http://www.tapr.org/tapr/html/dayton.html, or send e-mail to
        tapr@tapr.org. You can request information via packet radio at
        BASH@N8ACV.#DAY.OH.USA.NOAM.




        ------------------------------------------------------------------------
        Tucson Amateur Packet Radio
        8987-309 E Tanque Verde Rd #337 * Tucson, Az * 85749-9399
        ------------------------------------------------------------------------
        e-mail: tapr@tapr.org       web: <http://www.tapr.org/>
        ftp:    ftp.tapr.org
        phone:  940-383-0000        fax: 940-565-2544
        ------------------------------------------------------------------------
```

2. Wireless Access Mag

```
From: bm@lynx.ve3jf.ampr.org
Date: Fri, 8 May 1998 19:48:35 -0400 (EDT)
To: ss@tapr.org
Message-ID: <199805082348.TAA19787@lynx.ve3jf.ampr.org>
Rendered body type: text/plain
```

There's a new magazine some of you might be interested in: Wireless Access Technologies, published in the UK. Although it's telecom oriented, it will be covering WLANs and other topics of interest to SS afficionados. You can check out their website at http://www.watmag.com, and fill out the form to convince them you qualify for a freebie subscription.

Barry

--

```
  Barry McLarnon  VE3JF/VA3TCP   |  Internet: bm@hydra.carleton.ca
  Ottawa Amateur Radio Club      |  AMPRnet:  bm@lynx.ve3jf.ampr.org
  Packet Working Group           |  Web:      http://hydra.carleton.ca
```

3. Amplification of DSSS??

From: Mike Dent <mike@mary.g6phf.ampr.org>
Date: Sat, 16 May 1998 20:03:59 +0100
To: ss@tapr.org
Message-ID: <980516200359.ZM24920@mary.g6phf.ampr.org>
Rendered body type: text/plain

Hi folks, I am new to this list so forgive what may be an FAQ!
What are the implications involved with amplifying the output of a DSSS LAN
card, such as the WaveLAN card?
Is it feasable to use a linear type amplifier for this purpose?
Thanks
Mike

--
"I remember when NOS was NET and all you got was "Welcome to TTY-link.." "
 Mike Dent. G6PHF. Morecambe, Lancs. UK.| BBSnet=G6PHF@GB7MBB.#16.GBR.EU
 AMPRnet=g6phf@gb7mbb.ampr.org | INTERnet=mike@lurpac.lancs.ac.uk
 WWW=http://www.lurpac.lancs.ac.uk/g6phf/g6phf.html | BayBBS +44 (0)1524 833222

4. Re: [SS:1951] Amplification of DSSS??

From: ChrisEilbeck <chris@yordas.demon.co.uk>
Date: Sat, 16 May 1998 20:36:57 +0000
To: ss@tapr.org
Message-ID: <355DF8E9.D6CC0E3E@yordas.demon.co.uk>
Rendered body type: text/plain

Mike Dent wrote:
>
> What are the implications involved with amplifying the output of a DSSS
> LAN card, such as the WaveLAN card?
> Is it feasable to use a linear type amplifier for this purpose?

You would need a linear amplifier, I don't know about the Wavelan card
but it probably uses BPSK. You'll probably need to hack the card as
well to seperate the transmit and receive paths.

Of course we are only talking theoretically so we needn't worry about
the legal implications of upping the power.

Chris
--
Chris Eilbeck
mailto:chris@yordas.demon.co.uk

5. [SS:1952] Re: Amplification of DSSS??

From: Brian Bartholomew <bb@wv.com>
Date: Sat, 16 May 1998 19:07:23 -0400
To: ss@tapr.org
Message-ID: <199805162307.TAA05815@battleship>
Rendered body type: text/plain

> What are the implications involved with amplifying the output of a
> DSSS LAN card, such as the WaveLAN card?

I assume the reason you are amplifying is to drastically increase the
distance between endpoints.

You should find out what scheme the cards use to prevent simultaneous
interfering transmission. If it's a CS/CDMA (Collision Sense/
Collision Detect Multiple Access) scheme like ethernet, you'll find
there are timeouts that correspond to a maximum distance between cards
due to lightspeed delay.

If there are only two stations on the link, and the radio works full
duplex, you may be able to ignore this problem because there will
never be interfering transmissions.

A member of the League for Programming Freedom (LPF) ftp://ftp.gnu.org/pub/lpf
----
Brian Bartholomew - bb@wv.com - www.wv.com - Working Version, Cambridge, MA

6. [SS:1952] Re: Amplification of DSSS??

From: Brian Bartholomew <bb@wv.com>
Date: Sat, 16 May 1998 19:23:24 -0400
To: ss@tapr.org
Message-ID: <199805162323.TAA05827@battleship>
Rendered body type: text/plain

There is such a thing as full-duplex ethernet. It's used as a point-
to-point link between two stations, and has separate wire pairs for
transmit and receive. I always figured this for the easiest way to
get 100 Mbits in and out of a PC, that was suitable for plugging into
a radio (or a free-air-path laser) and insensitive to path delay.

Actually, you may not need the full-duplex variant to get separated
transmit and receive. Seems to me a 10BaseT interface already has the
channels separated into two wire pairs. However, the hardware may not
be capable of sending and receiving at the same time.

A member of the League for Programming Freedom (LPF) ftp://ftp.gnu.org/pub/lpf
----
Brian Bartholomew - bb@wv.com - www.wv.com - Working Version, Cambridge, MA

7. harris prism

From: Claudio Ceravolo <claudio@cln.it>
Date: Sun, 17 May 1998 01:34:46 +0200
To: ss@tapr.org
Message-ID: <355E2296.BADC2D39@cln.it>
Rendered body type: text/plain

I have 4 PRISM HARRIS demo board and I sell 2 prism demo board because
for my use is too 2 board if you know the device well or you can see at

http://www.semi.harris.com/prism/half/prismkit.htm
I have all kit and I can sell at 2000 USD with also the data sheets of
Harris and AMD
the name of the kit is PRISM1KIT-EVAL I have see the performances and
there are very high you can transfer 60 Mbit in 7   min to a computer
at another .

--
Grazie per l'interesse
Claudio Ceravolo
claudio@cln.it
Electronic Systems srl
http://www.cln.it/elsys

 ///////
(o)(o)
    /
   =
[Attachment: vcard.vcf; text/x-vcard; 240 bytes]

8. Re: [SS:1951] Amplification of DSSS??

From: Jeff King <jeff@aerodata.net>
Date: Sat, 16 May 1998 19:58:40 -0400
To: ss@tapr.org
Message-ID: <3.0.5.32.19980516195840.00a47bf0@aerodata.net>
Rendered body type: text/plain

At 02:08 PM 5/16/98 -0500, Mike Dent wrote:
>Hi folks, I am new to this list so forgive what may be an FAQ!
>What are the implications involved with amplifying the output of a DSSS LAN
>card, such as the WaveLAN card?
>Is it feasable to use a linear type amplifier for this purpose?
>Thanks
>Mike

This is fairly commonly done with the Wavelan card, it being the
component element of any number of wireless bridges.

You'll need a quick changeover between transmit and recieve. Something
on the order of 50-100usec. You'll also need to insure a true linear
amplifier (i.e. not a class C amp).

A company out of Florida I think makes a amplifier for this purpose.
I think there name is Hyperlink. I used one once on another project and
I found the engineering to be quite poor.

What band do you need one for? Pole Zero (they were at Dayton) makes a
2.5ghz one.

-Jeff

```
-----------------------------------
| Jeff King      Aero Data Systems |
| jeff@mich.com  P.O. Box 510895   |
| (248)471-1787  Livonia, MI 48151 |
|F(248)471-0279  United States     |
-----------------------------------
```

9. Comet FP-19 Base Antenna

From: Rob Smith <robs@bconnex.net>
Date: Wed, 20 May 1998 10:32:17 -0400
To: ss@tapr.org
Message-ID: <Version.32.19980520102223.00e79330@bconnex.net>
Rendered body type: text/plain

I'm looking at buying a Comet FP-19 Base Antenna for 900 MHz and would
appreciate any comments good or bad. Also any info on best street price.
                        Thanks.

Rob Smith
Collingwood, Ont
E-Mail: robs@bconnex.net

10. Re: [SS:1957] Comet FP-19 Base Antenna

From: "Greg Jones, WD5IVD" <wd5ivd@tapr.org>
Date: Wed, 20 May 1998 10:05:12 -0500
To: ss@tapr.org
Message-ID: <v04003a01b188a16c3985@[207.43.172.66]>
Rendered body type: text/plain

While it is a good antenna, both the ones I have deployed haven't work for
the fact that they are verticle in nature. I took both of them down and am
now using a horz omni which does work.

I found this to be true for both the Freewave and now the Cylink testing I
have done.

Greg

>   I'm looking at buying a Comet FP-19 Base Antenna
>for 900 MHz and would
>appreciate any comments good or bad. Also any info on best street price.
>   Thanks.
>
>Rob Smith
>Collingwood, Ont
>E-Mail: robs@bconnex.net

Greg Jones, WD5IVD   Austin, Texas
wd5ivd@tapr.org   http://www.tapr.org/~wd5ivd

Real World, The n.:
        5. Anywhere outside a university. "Poor fellow, he's left UT
Austin and gone into the real world."

11. Bi-lateral Amplification 0f 900 MHz DSSS

From: Rob Smith <robs@bconnex.net>
Date: Wed, 20 May 1998 11:17:04 -0400
To: ss@tapr.org
Message-ID: <199805201515.LAA12789@bconnex.net>
Rendered body type: text/plain

Does anyone have experience in converting low cost equipment, like the
separate PA & LNA from Down East Microwave, to provide bi-lateral 900MHz
amplification of TDMA DSSS? How is it done in the Hyperlink commercial
amplifier?
Have you seen a home construction article for such an amplifier?
                        Thanks in advance for all information.

Rob Smith
Collingwood, Ont

E-Mail: robs@bconnex.net

12. Re: [SS:1958] Re: Comet FP-19 Base Antenna

From: Gerry Creager <n5jxs@tamu.edu>
Date: Wed, 20 May 1998 21:08:32 -0500
To: ss@tapr.org
Message-ID: <35638CA0.18F8@tamu.edu>
Rendered body type: text/plain

Greg Jones, WD5IVD wrote:
>
> While it is a good antenna, both the ones I have deployed haven't work for
> the fact that they are verticle in nature. I took both of them down and am
> now using a horz omni which does work.
>
> I found this to be true for both the Freewave and now the Cylink testing I
> have done.
>
> Greg
>
> >   I'm looking at buying a Comet FP-19 Base Antenna
> >for 900 MHz and would
> >appreciate any comments good or bad. Also any info on best street price.

If you don't require gain, and are looking for sturdy and inexpensive, a
diskcone works pretty well (the Radio Shack version I have is over 5
years old) and has what can best b described as a "glob" pattern, so
it's going to be fairly effective in horizontal and vertical planes.

73, gerry

13. Re: [SS:1957] Comet FP-19 Base Antenna

From: Jeff King <jeff@mich.com>
Date: Wed, 20 May 1998 19:22:20 -0400
To: ss@tapr.org
Message-ID: <3.0.5.32.19980520192220.04203b50@mail.mich.com>
Rendered body type: text/plain

At 09:35 AM 5/20/98 -0500, Rob Smith wrote:
>   I'm looking at buying a Comet FP-19 Base Antenna for 900 MHz and would
>appreciate any comments good or bad. Also any info on best street price.
>   Thanks.

I've used one for over two years at my ISP, and have had good luck with
them. I'm using notch filters on it to get rid of nearby pagers, but thats
a function of polarization. I can get about 3-4 miles range from the ISP
to my car, through a wooded suburban environment. The comet is about 35 feet
above ground feed with 75 feet of 9913. Topography here is flat. I'm using
Freewave radios (hoppers) on both ends.

I think I paid about $110 for it.

Your other option for a gain omni antenna is Olde' Antenna Lab, out of
I think Denver. Dave Klinger runs it and he was at the DownEast Microwave
booth. He has a stacked omni (like the old big wheel's of 6 meters) that
can give you 6 dBi gain in the horizontal plane. I think he wants about
$300 for that.

-Jeff

```
------------------------------------
| Jeff King      Aero Data Systems |
| jeff@mich.com  P.O. Box 510895   |
| (248)471-1787  Livonia, MI 48151 |
|F(248)471-0279  United States     |
------------------------------------
```

14. Re: [SS:1959] Bi-lateral Amplification 0f 900 MHz DSSS

From: Jeff King <jeff@mich.com>
Date: Wed, 20 May 1998 19:44:51 -0400
To: ss@tapr.org
Cc: robs@bconnex.net
Message-ID: <3.0.5.32.19980520194451.041fdc10@mail.mich.com>
Rendered body type: text/plain

At 10:21 AM 5/20/98 -0500, Rob Smith wrote:
>Does anyone have experience in converting low cost equipment, like the
>separate PA & LNA from Down East Microwave, to provide bi-lateral 900MHz
>amplification of TDMA DSSS?

You'll need a linear amp and very quick turnaround time (pin diode).
Down East has a 900mhz module they sell (I think it is the PA11) that
will do about 10 watts. They don't have any off the shelf pin switching
modules but you should be able to home brew something.

>How is it done in the Hyperlink commercial
>amplifier?

Those things remind me of CB amps from the 1970's. I heard a rumor from
a competitor of theirs that H.L. was using a class C brick in them. I do know
from personal experience they are not designed very well, there are no
reverse voltage protection diodes in them and the circuit is epoxy
encapsulated.

>Have you seen a home construction article for such an amplifier?

Yes, but all of the ones I have seen have been relay switched, and
useless for spread spectrum.

Your key elements you might want are as follows:
Quick T/R switching (pin diode)
Linear
Can be powered via the COAX cable (DC on top of RF)
Gain adjustable
Band pass filter

Sorry couldn't have been of more help. I have been working on a
design, off and on, for a while now and if I get any further will give
you more info.

-Jeff wb8wka

| Jeff King   Aero Data Systems |
| jeff@mich.com P.O. Box 510895 |
| (248)471-1787 Livonia, MI 48151 |
|F(248)471-0279 United States |
----

15. TAPR SS project

From: tv@juno.com (Tim Vaughan)
Date: Wed, 20 May 1998 20:42:26 -0700
To: ss@tapr.org
Message-ID: <19980520.214257.12078.5.tv@juno.com>
Rendered body type: text/plain

What is the status of the TAPR frequency hopping spread sprectrum project
?
I have not heard much lately.   It sounds like an exciting design.

Tim

(tv@juno.com)

_____
You don't need to buy Internet access to use free Internet e-mail.
Get completely free e-mail from Juno at http://www.juno.com
Or call Juno at (800) 654-JUNO [654-5866]

16. Re: [SS:1951] Amplification of DSSS??

From: Phil Karn <karn@qualcomm.com>
Date: Wed, 20 May 1998 16:13:56 -0700
To: ss@tapr.org
Message-ID: <356363B4.15087BB3@qualcomm.com>
Rendered body type: text/plain

Mike Dent wrote:

> What are the implications involved with amplifying the output of a DSSS LAN
> card, such as the WaveLAN card?
> Is it feasable to use a linear type amplifier for this purpose?

Amplifier linearity is a consideration with most DSSS signals.
Depending on the waveform, the peak-to-average power ratio can
sometimes approximate that of gaussian noise (which the signal
resembles). A linear amplifier with sufficient headroom is important
to keep the occupied bandwidth within proper limits.

I know this is an issue with IS-95 CDMA. There's very tight filtering
on the transmitted waveform to protect adjacent narrowband AMPS
signals, and this filtering causes a lot of envelope fluctuations.

Phil

17. Re: [SS:1964] Re: Amplification of DSSS??

From: Lyle Johnson <lylej@azstarnet.com>
Date: Thu, 21 May 1998 07:19:18 -0700
To: ss@tapr.org
Message-ID: <3.0.5.32.19980521071918.008f3750@pop.azstarnet.com>
Rendered body type: text/plain

At 01:03 AM 5/21/98 -0500, Phil Karn wrote:
>Mike Dent wrote:
>
>> What are the implications involved with amplifying the output of a DSSS
 LAN
>> card, such as the WaveLAN card?
>> Is it feasable to use a linear type amplifier for this purpose?
>
>Amplifier linearity is a consideration with most DSSS signals.
>Depending on the waveform, the peak-to-average power ratio can
>sometimes approximate that of gaussian noise (which the signal
>resembles). A linear amplifier with sufficient headroom is important
>to keep the occupied bandwidth within proper limits.
>
>I know this is an issue with IS-95 CDMA. There's very tight filtering
>on the transmitted waveform to protect adjacent narrowband AMPS
>signals, and this filtering causes a lot of envelope fluctuations.

We have been very successful using a Mini Circuits Labs linear amplifier
with a Harris PRISM chipset. This combination gives us +30dBm and things
look clean on the spectrum analyzer. With so-called "5 dB omnidirectional"
antennas, a feedline about1 meter in length of RG-213 (lossy) and no
pre-amp on the PRISM (it has lots of other problems that combine to give it
a pretty high threshold) we get just under 9 km range over line-of-sight.

73,

Lyle

18. Re: [SS:1963] TAPR SS project

From: bm@lynx.ve3jf.ampr.org
Date: Tue, 26 May 1998 23:34:05 -0400 (EDT)
To: ss@tapr.org
Message-ID: <199805270334.XAA09739@lynx.ve3jf.ampr.org>
Rendered body type: text/plain

tv@juno.com (Tim Vaughan) wrote:
> What is the status of the TAPR frequency hopping spread sprectrum project
> ?
> I have not heard much lately.   It sounds like an exciting design.

I don't recall seeing a reply to this, so I'll just mention that the web page
for info on this project is

http://www.tapr.org/tapr/html/taprfhss.html

Good progress has been made, but there's a long way to go yet. I wouldn't
expect to see fully functional hardware until sometime next year.

Barry

--
  Barry McLarnon VE3JF/VA3TCP | Internet: bm@hydra.carleton.ca
  Ottawa Amateur Radio Club | AMPRnet: bm@lynx.ve3jf.ampr.org
  Packet Working Group | Web: http://hydra.carleton.ca

19. More on DS SS amplification....

From: Mike Dent <mike@mary.g6phf.ampr.org>
Date: Wed, 27 May 1998 13:48:55 +0100
To: ss@tapr.org
Message-ID: <980527134853.ZM24990@mary.g6phf.ampr.org>
Rendered body type: text/plain

Hello again. Many thanks to all those who replied to my last message regarding amplification of DS SS.
The cards in question are Lucent Wavelan cards operating at 2.4Ghz, using DS SS. The output of the cards is 32mW. I think I need about 1 watt for my application.
Has anybody constructed their own amplifiers for this type of purpose?
I have a German design for a linear PA (I cant remember the designer, the article is at work), it seems to have sufficient gain and operates to 5 watts.
I am wondering if this kind of approach would be worthwhile? I was considering using a seperate antenna for transmit and receive at each end, using a simple splitter from the output of the Wavelan card, I realise I would loose at least 3dB doing this. Maybe it is easier using some kind of switching arangment, pin diode etc and sticking with one antenna??

Thanks again to anybody who replies, I dont want to go to all the bother of constructing some PA's only to find they are useless, so any ideas are more than welcome.
73
Mike

--
"I remember when NOS was NET and all you got was "Welcome to TTY-link.." "
Mike Dent. G6PHF. Morecambe, Lancs. UK.| BBSnet=G6PHF@GB7MBB.#16.GBR.EU
AMPRnet=g6phf@gb7mbb.ampr.org | INTERnet=mike@lurpac.lancs.ac.uk
WWW=http://www.lurpac.lancs.ac.uk/g6phf/g6phf.html | BayBBS +44 (0)1524 833222

20. VCO PLL

From: Steve Sampson <ssampson@access.usa-site.net>
Date: Thu, 28 May 1998 07:22:59 -0500 (CDT)
To: ss@tapr.org
Message-ID: <199805281222.HAA23169@access.usa-site.net>
Rendered body type: text/plain

I finally got around to reading the Fall 97 PSR, and enjoyed reading about the TAPR SS Radio; very well written. Reading about the PLL design there was a trade-off to allow the units to be shipped outside the U.S. and Canada. The thought I had, was: is there any other country which allows Amateur SS? I guess the real question is, would user access to the hopping sequence be an advantage or disadvantage? The article didn't go past the legal restriction. I really like the decision to use the Qualcomm stuff, since reading Karns tutorials and slides has been very interesting as well.

Steve

21. TAPR Office Closure

From: "Greg Jones, WD5IVD" <wd5ivd@tapr.org>
Date: Sat, 30 May 1998 13:42:11 -0500
To: "TAPR-BB list mailing"<tapr-bb@tapr.org>,
"NETSIG list mailing"<netsig@tapr.org>,
"APRS SIG list mailing"<aprssig@tapr.org>,
"HF SIG list mailing"<hfsig@tapr.org>,
" Spread Spectrum "<ss@tapr.org>,
"BBS SIG list mailing"<bbssig@tapr.org>,
" tacgps "<tacgps@tapr.org>
Message-ID: <v04003a09b19601d3362e@[207.8.125.50]>
Rendered body type: text/plain

The TAPR office will be closed for at least two weeks beginning Monday.

Dorothy Jones, KA5DWR, Office Manager underwent surgery this morning and will be in the hospital the rest of this week recovering. Good news is that the surgery went well and we are waiting for Dorothy now to get out of post-op.

E-Mails, Faxes, and Calls to the office will still be accepted, but expect delays in getting kits and publications shipped until things get back to normal at the Jone's household. I'll be heading to Denton to help at the office while Dorothy is recovering, but things will be slowed down until Dorothy is feeling better.

You can send flowers or greetings to:
Denton Community Hospital
207 North Bonnie Brae
Denton TX 76201
Telephone: 940 898-7000
Room 139, Dorothy T Jones

I will be taking e-mail up to her if you want to send something by e-mail.

Greg Jones, WD5IVD
Pres. TAPR

Greg Jones, WD5IVD Austin, Texas
wd5ivd@tapr.org http://www.tapr.org/~wd5ivd

Real World, The n.:
5. Anywhere outside a university. "Poor fellow, he's left UT Austin and gone into the real world."

22. 1998 ARRL and TAPR Digital Communications Conference

From: "Greg Jones, WD5IVD" <wd5ivd@tapr.org>
Date: Sun, 31 May 1998 14:10:14 -0500
To: "HF SIG list mailing"<hfsig@tapr.org>, " Spread Spectrum "<ss@tapr.org>,
" TAPR/AMSAT DSP "<dsp@tapr.org>,
"APRS SIG list mailing"<aprssig@tapr.org>,
"NETSIG list mailing"<netsig@tapr.org>,
"BBS SIG list mailing"<bbssig@tapr.org>,
" tacgps "<tacgps@tapr.org>, aprsnews@tapr.org, mic-e@tapr.org,
TAPR Regional Freq <regional_freq@tapr.org>
Message-ID: <v04003a01b1975b5f40bd@[207.8.125.50]>
Rendered body type: text/plain

1998 ARRL and TAPR Digital Communications Conference
September 25-27, 1998
Chicago, Illinois (minutes from O'Hare Airport)

Web: http://www.tapr.org/dcc

It's that time again! Mark your calendar and think about what to publish for the upcoming 17th Annual ARRL and TAPR Digital Communications Conference. This is the third year in which the ARRL Digital Communications Conference and TAPR Annual General Meeting are joined into one conference!

The ARRL and TAPR Digital Communications Conference is an international forum for radio amateurs in digital communications, networking, and related technologies, who meet, publish their work, and present new ideas and techniques for discussion. Presenters and attendees have the opportunity to exchange ideas and learn about recent hardware and software advances, theories, experimental results, and practical applications. The Digital Communications Conference is not just for the digital expert, but for digitally-oriented amateurs at all levels of expertise.

The 1998 ARRL and TAPR Digital Communications Conference will be held September 25-27, 1998, in Chicago, Illinois. This year's conference location is the Holiday Inn Rolling Meadows, just minutes from O'Hare Airport.

Not only is the Digital Communications Conference technically stimulating, it is a weekend of fun for all who have more than a casual interest in any of the ham digital communications modes. This includes APRS operators, digital networks, software writers, modem designers, and digital satellite enthusiasts. The ARRL and TAPR Digital Communications Conference is for all levels of digital operators -- a must conference to attend to become active on a national level. Now, more than ever, amateur radio needs this great meeting of the minds because it is important that we demonstrate a continued need for the frequency allocations we have by pushing forward and documenting our achievements. The ARRL and TAPR Digital Communications Conference is one of the few ways to record our accomplishments and challenge each other to do more.

A Conference for the Beginner, Too

The conference is not just for the digital expert. This year's conference again provides multiple session tracks for beginning, intermediate, and advanced presentations on selected topics in digital communications. Topics will include APRS, satellite communications, TCP/IP, digital radio, Spread Spectrum, and many others. Come to the conference and hear these topics presented by the experts! Don't miss this opportunity to listen and

talk to others in these areas.

Symposia and Seminars

In addition to the presentation of papers on Saturday, three symposia/seminars will be held. These sessions are provided to allow those with additional time and interest to make the most of the Digital Communications Conference. For those who may have interest in just one symposium or seminar, registration for the conference is not required to attend these activities. This allows maximum flexibility for those who may want to participate during the Digital Communications Conference, but do not have an entire weekend to devote to the event.

The Second APRS National Symposium will be held on Friday and will be moderated by Steve Dimse, K4HG (the developer of javAPRS). It will likely include many APRS software authors, such as Bob Bruninga, WB4APR (the father of APRS), Keith Sproul, WU2Z, Mark Sproul, KB2ICI (the developers of MacAPRS and WinAPRS), Brent Hildebrand, KH2Z (the developer of APRSPLUS), and other nationally-known APRS leaders. Join this group for the afternoon and evening for in-depth discussions and presentations on the current and future status of APRS. This is a unique opportunity to gain insight into this fast-growing digital aspect of amateur operations that combines computers, packet radio, and GPS (Global Positioning System).

Starting late Friday afternoon, a half-day seminar titled "Infrastructureless Technologies in Amateur Radio," presented by Don Lemke, WB9MJN, will cover the pros and cons of DDMA (directivity division multiple access, a proposed infrastructureless technigue) versus hubbed (cellular style) and other infrastructure dependant techniques, the basic problem of megabaud rate communications into the ham QTH, and some techniques for channel-area acquisition including full duplex/asynchronous versus simplex/synchronous radio/acquisition concepts. This seminar will start late enough on Friday afternoon to allow those flying that day to attend the seminar.

The Sunday morning seminar will be a combination of two different talks that will make one excellent seminar. The first presentation, by Lyle Johnson, WA7GXD, will focus on the upcoming RUDAK digital communications system scheduled to fly on the AMSAT Phase 3D satellite in the near future. Lyle will discuss features, systems design, integration, and experiments. The goal of the presentation is to zero in on the communications capabilities of RUDAK, the performance to be expected from the 153k6 PSK system, the limitations and capacities of the DSP modems, user requirements for receiving RUDAK, requirements for transmitting to RUDAK, and how amateurs can work to make ground operations a reality once the satellite is in operation. Information on how to submit a proposal for experimental time on RUDAK will be presented. The second presentation will be by Tim Shepard, KD1KY, regarding "Packet Radio Networks with Millions or Billions of Stations." This talk will present concepts and materials that make you think about different possibilities of networking in the future. Both Lyle's and Tim's presentations focus on different aspects of future digital communications possibilities.

Third Annual ARRL and TAPR DCC Student Papers Award

ARRL and TAPR especially welcome papers from full-time students to compete for the third annual student papers award. Two $500 travel awards may be given, one in each of the following categories: a) best technical/theory-oriented paper by a student, and b) best educational or community-oriented application paper by a student. The paper should relate directly to a wireless digital communication topic (see the guidelines for more information). Papers co-authored by educators or telecommunications professionals are also eligible for this award as long as a student is the first author. The deadline for receipt of finished student paper manuscript is June 20, 1998. Please note that this deadline is different from the general conference paper submission date. For full details and paper guidelines contact TAPR or browse to http://www.tapr.org/dcc.

Call for Conference Proceeding Papers

Anyone interested in digital communications is invited to submit a paper for publication in the Conference Proceedings. Presentation at the conference is not required for publication. The primary purpose of the

conference is to communicate ideas and techniques regarding digital communications. Papers written in an informal style are welcome, as well as those written to academic standards. If you know of someone who is doing great things with digital communications, be sure to tell them about this! Papers are due by August 15, 1998, and should be submitted to Maty Weinberg, ARRL, 225 Main Street, Newington, CT 06111, or via e-mail to lweinberg@arrl.org. The paper submission guidelines are available on-line (http://www.tapr.org/dcc).

Local/International Co-Host

The 1998 ARRL and TAPR Digital Communications Conference will be co-hosted by Chicago Amateur Packet Radio Association (CAPRA). CAPRA is one of the oldest packet radio groups in the US. It focuses on education about amateur packet radio, coordination of joint efforts of hams interested in packet radio, and technical and equipment support for a sound packet network in the Chicago area. They have had high-speed packet networks operational since the mid-1980s. Visit the CAPRA Web site at http://www.imaxx.net/capra for more information.

PRUG (Packet Radio User Group of Japan) will be the first International co-host of the ARRL and TAPR Digital Communications Conference. The conference is proud to welcome PRUG as part of the conference. PRUG will be hosting an informal social Friday evening after the seminar and symposium are completed. Visit http://www.prug.or.jp for more information about the organization.

What can you expect during the 1998 ARRL and TAPR Digital Communications Conference?

* A full day of papers, breakout sessions, and selected topics on Saturday for the beginner to advanced amateur digital enthusiast.

* Three seminars/symposia
  Friday (1 PM)
  - Second Annual APRS National Symposium,
    moderated by Steve Dimse, K4HG

  Friday (3 PM)
  - Infrastructure Technologies in Amateur Radio
    conducted by Don Lemke, WB9MJN

  Sunday (8:30 AM)
  - RUDAK Future Operations and Experimentations
    by Lyle Johnson, WA7GXD
  - Packet Radio Networks with Millions or Billions of Stations
    by Tim Shepard, KD1KY

* Third Annual Student Paper Awards.

* TAPR Membership Meeting

* A banquet with special guest speaker Steve Roberts, N4RVE, of Nomadic Research Labs. Creator of the Winnebiko and Behemoth high-tech recumbent bicycles. His current project is focused on Microship technology (http://www.microship.com/).

* SIGs (Special Interest Groups) get-togethers on Saturday, following the banquet

* Informal get-togethers throughout the weekend

* A facility that is perfect for this type of conference

* Informal engineering discussions/demonstration areas

* Motorola Museum located in the area.

* An event at which the most important new developments in amateur digital communications are announced

* Digital 'movers and shakers' from all over the world in attendance

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Conclusion

If you have attended a Digital Communications Conference in the past, remember how much fun it was discussing the latest developments into the wee hours! If you have never been to a Digital Communications Conference, then make your plans now to attend and find out how much fun they can be.

There are few activities where your participation can be so much fun and so important! You will be able to get together with colleagues from all over the world and bring each other up to date on your latest work. Experience all this and more for an unforgettable weekend of ham radio and digital communications. Make your travel and lodging arrangements now. We hope to see you at the ARRL and TAPR Digital Communications Conference, September 25-27!

Full information on the conference and hotel information can be obtained by contacting Tucson Amateur Packet Radio, 8987-309 E. Tanque Verde Road #337, Tucson, AZ 85749-9399, phone 940-383-0000, fax 940-566-2544, e-mail tapr@tapr.org, browse www.tapr.org/dcc.

Sincerely,

Steve Ford, WB8IMY, ARRL Conference Co-Chair
Greg Jones, WD5IVD, TAPR Conference Co-Chair
Steve Stroh, N8GNJ, Conference Manager
Mark J. Thompson, WB9QZB, Local Host Liaison
Carl Bergstedt, K9VXW, Local Host Liaison

Note: If you need conference handouts or flyers for ham club meetings, contact TAPR to get what you need!

Hotel Information

Conference presentations, meetings, and seminars will be held at the Holiday Inn Rolling Meadows. Special DCC rooms rates are $85 per night. When making reservations with the hotel, be sure to indicate you are attending the ARRL and TAPR DCC in order to get the discount. It is highly recommended that you book your room prior to arriving. A block of 75 rooms is reserved until August 31, 1998. After the 75 rooms are booked, rooms will only be available in nearby hotels, so be sure to book your rooms early! The hotel provides transportation to and from O'Hare Airport. Please contact the hotel to arrange specific transportation needs.

Holiday Inn Rolling Meadows (conference hotel)
3405 Algonquin Rd
Rolling Meadows, IL 60008
Phone 847-259-5000, fax 847-259-0597

Registration

Contact the TAPR office by phone, fax, or e-mail (numbers and addresses are above) to register or for additional meeting information. MasterCard and VISA are accepted.

- Preregistration (before Sept 1): $42.00 *

- Late registration or at door: $47.00 *

* - Conference registration includes Conference Proceedings, Saturday sessions/meetings, and lunch.

- Saturday Evening Dinner (limited space): $20.00 **

** - Includes dinner, speaker, prize drawing

Seminar/symposia

Note: You do not have to be registered for the conference to attend one or more of the seminars/symposia.

- Friday, 1-8 PM, Second Annual APRS National Symposium (full day)

Registration: $25***

- Friday 3-7 PM, Infrastructure Technologies in Amateur Radio, conducted by Don Lemke, WB9MJN

   Registration: $15***

Sunday 8:30-11 AM and 11:30 AM-2 PM, RUDAK Future Operations and Experimentations by Lyle Johnson, WA7GXD, and Packet Radio Networks with Millions or Billions of Stations by Tim Shepard, KD1KY

   Registration $20***

*** Cost of seminar or symposium includes the cost of handout materials.

Contact TAPR to register for the DCC:

Tucson Amateur Packet Radio
8987-309 E. Tanque Verde Road #337
Tucson, AZ 85749-9399.
phone 940-383-0000, fax 940-566-2544
e-mail tapr@tapr.org, browse http://www.tapr.org

June 1998

Original source file: ss.9806
Source: http://ftp.tapr.org/tapr_history/SIG_Archives/spread-spectrum-sig/mail_archive/ss.9806

1. cancel request

From: STEVE LOTKIN <irwin@zianet.com>
Date: Mon, 01 Jun 1998 16:32:58 -0600
To: ss@tapr.org
Message-ID: <3.0.32.19980601163257.006938dc@zianet.com>
Rendered body type: text/plain

Unsubscribe

2. postscript to PDF

From: "Dale Heatherington" <wa4dsy@wa4dsy.radio.org>
Date: Thu, 04 Jun 98 11:34:51
To: "ss@tapr.org" <ss@tapr.org>
Message-ID: <199806041534.LAA08155@www.wa4dsy.radio.org>
Rendered body type: text/plain

Does anyone on this list have the sofware required to
convert postscript files to PDF files? I'd like to make the
schematics of my 56K modem available in PDF format
if someone is willing to do it for me. They are currently
in postscript format and are available at

http://www.wa4dsy.radio.org/Files/56kschem.Zip

Thanks.

3. re: postscript to PDF - mission accomplished

From: "Dale Heatherington" <wa4dsy@wa4dsy.radio.org>
Date: Thu, 04 Jun 98 14:08:17
To: "ss@tapr.org" <ss@tapr.org>
Message-ID: <199806041808.OAA08692@www.wa4dsy.radio.org>
Rendered body type: text/plain

Thanks to all who responded to my request. Greg Jones emailed
me the converted files and they are now posted on my web page.

4. Re: [SS:1972] postscript to PDF

From: RLANIER@mailb.harris.com (RLANIER)
Date: Thu, 4 Jun 1998 13:05:09 -0400
To: ss@tapr.org
Message-ID: <001573D2.1702@mailb.harris.com>
Rendered body type: text/plain

I think I can do this for you. I'll try it later today and see what I
     get. I'll post a message to this list and let you know.

     Tony   KE4ATO

_____________________________ Reply Separator _____________________________
Subject: [SS:1972] postscript to PDF
Author: ss@tapr.org at smtp
Date: 6/4/98 10:43 AM

Does anyone on this list have the sofware required to
convert postscript files to PDF files? I'd like to make the
schematics of my 56K modem available in PDF format
if someone is willing to do it for me. They are currently
in postscript format and are available at

http://www.wa4dsy.radio.org/Files/56kschem.Zip

Thanks.

5. Re: [SS:1972] postscript to PDF

From: RLANIER@mailb.harris.com (RLANIER)
Date: Thu, 4 Jun 1998 14:35:48 -0400
To: ss@tapr.org
Message-ID: <001575D3.1702@mailb.harris.com>
Rendered body type: text/plain

I can convert the files for you. I can FTP them wherever you need
     them. Let me know how you want this done and I will tell you if I can
     do it.

     Tony   KE4ATO

_____ Reply Separator _____
Subject: [SS:1972] postscript to PDF
Author: ss@tapr.org at smtp
Date: 6/4/98 10:43 AM

Does anyone on this list have the sofware required to
convert postscript files to PDF files? I'd like to make the
schematics of my 56K modem available in PDF format
if someone is willing to do it for me. They are currently
in postscript format and are available at

http://www.wa4dsy.radio.org/Files/56kschem.Zip

Thanks.

6. 56K modem schematic .pdf

From: Glenn Elmore <ge@hpsadr2.sr.hp.com>
Date: Thu, 4 Jun 1998 11:36:06 -0800 (PDT)
To: ss@tapr.org (ge)
Cc: wa4dsy@wa4dsy.radio.org
Message-ID: <199806041836.AA169205366@hpsadr2.sr.hp.com>
Rendered body type: text/plain

> From: "Dale Heatherington" <wa4dsy@wa4dsy.radio.org>

> Does anyone on this list have the sofware required to
> convert postscript files to PDF files? I'd like to make the
> schematics of my 56K modem available in PDF format
> if someone is willing to do it for me. They are currently
> in postscript format and are available at
>
> http://www.wa4dsy.radio.org/Files/56kschem.Zip

Dale,

http://www.sonic.net/~n6gn/56kp01.pdf
http://www.sonic.net/~n6gn/56kp02.pdf
http://www.sonic.net/~n6gn/56kp03.pdf
http://www.sonic.net/~n6gn/56kp04.pdf

Glenn Elmore n6gn

IP by radio: glenn@SantaRosa.ampr.org
   by wire: ge@sr.hp.com
                n6gn@sonic.net

|--------- N6GN's Higher Speed Packet WWW Page ---------|
| |
| http://www.tapr.org/~n6gn/index.html |
| http://www.sonic.net/~n6gn |

7. Re: [SS:1975] Re: postscript to PDF

From: Bob Nielsen <nielsen@primenet.com>
Date: Thu, 4 Jun 1998 13:35:26 -0700 (MST)
To: ss@tapr.org
Message-ID: <Pine.LNX.3.96.980604133336.254A-100000@nielsen.tus.primenet.com>
Rendered body type: text/plain

Since there has been quite a bit of response to Dale's request, let me ask
this: What is the best software to convert .ps files to .pdf? I have
used ps2pdf, which comes with Aladdin Ghostscript 5.10, but am not too
impressed with the results. Are there alternatives (preferably for
Linux)?

Bob

Bob Nielsen   Internet: nielsen@primenet.com

Tucson, AZ AMPRnet: w6swe@w6swe.ampr.org
http://www.primenet.com/~nielsen

8. Using a PN for FHSS

From: "Geoff Webb" <webbg@wsu.edu>
Date: Thu, 4 Jun 1998 13:42:14 -0700
To: <ss@tapr.org>
Message-ID: <000901bd8ff9$41f2c5e0$11e07986@IBM1.urel.wsu.edu>
Rendered body type: text/plain

This is a very simple question, but I have been unable to find a concrete answer.
How do you use the PN sequence to determine the channel to use for FHSS?
Here is my situation.
I have a 900Mhz transmitter that can transmit on one of eight channels. The channel to use is selected by three TTL pins. I want to hook up the three pins to a microcontroller and use software to control the chipping. I was going to one of the ham legal PN sequences and use each group of three bit to determine the channel. For example:

PN sequence: 1011001
Channel selections: 101 100 110 110 011 011 001

Is this a legal way of doing this?
Or should I use a shift register?

Thank you for your assistance.

Geoff Webb
N7ZRR
webbg@wsu.edu

9. Re: [SS:1978] Using a PN for FHSS

From: Steve Sampson <ssampson@usa-site.net>
Date: Thu, 4 Jun 1998 21:16:11 -0500 (CDT)
To: ss@tapr.org
Message-ID: <199806050216.VAA10877@access.usa-site.net>
Rendered body type: text/plain

> This is a very simple question, but I have been unable to find a concrete
> answer.

The rules are online at the ARRL site. My reading of them limits the system to a hardware register, or a software version (same sequence). You could just build a table of all the 3 bit patterns, and then output that. Given the gross restriction inside the ARS, there aren't that many.

> How do you use the PN sequence to determine the channel to use for FHSS?
> Here is my situation.

In your case you would just run the three bits from the micro to the channel selector.

> I have a 900Mhz transmitter that can transmit on one of eight channels. The
> channel to use is selected by three TTL pins. I want to hook up the three
> pins to a microcontroller and use software to control the chipping. I was
> going to one of the ham legal PN sequences and use each group of three bit
> to determine the channel. For example:
>
> PN sequence: 1011001
> Channel selections: 101 100 110 110 011 011 001
>
> Is this a legal way of doing this?
> Or should I use a shift register?

As above, I'm pretty sure you have to use the hardware register, or a software equivelant.

The next step will be to see how fast the VCO changes. If it's in the audio range it will be hard to filter the buzz out.

Steve

10. Re: [SS:1968] VCO PLL

From: Jeff King <jeff@mich.com>
Date: Sat, 06 Jun 1998 20:30:10 -0400
To: ss@tapr.org
Message-ID: <3.0.5.32.19980606203010.03b54c70@mail.mich.com>

Rendered body type: text/plain

At 07:24 AM 5/28/98 -0500, Steve Sampson wrote:
>I guess the real question is, would user access to the
>hopping sequence be an advantage or disadvantage?

If its intended to be a experimenters tool, I'd say it
would be a great advantage.

| Jeff King   Aero Data Systems |
| jeff@mich.com P.O. Box 510895 |
| (248)471-1787 Livonia, MI 48151 |
|F(248)471-0279 United States |
----

11. RE: VCO PLL

From: Darryl Smith <vk2tds@ozemail.com.au>
Date: Sun, 07 Jun 1998 12:06:38 +1000
To: ss@tapr.org
Message-ID: <3579F5AE.65185BB8@ozemail.com.au>
Rendered body type: text/plain

> >I guess the real question is, would user access to the
> >hopping sequence be an advantage or disadvantage?
> If its intended to be a experimenters tool, I'd say it
> would be a great advantage.

Well, for me having access to teh hopping sequence would be a requirement
and an impossability. Since most of the world (except the USA) runs cell
phones on 900 MHz hopping needs to be modified to stay away from teh GSM
band. But I am sure export restrictions on SS gear prohibit users from
modifying the hopping code.

Then again here in Australia there are none of the bad requirements for SS
identification and all that you have in teh USA. I can run SS anywhere
above 420 MHz in a ham band and only identify in the SS signal

Darryl VK2TDS

12. Dorothy Update

From: "Greg Jones, WD5IVD" <wd5ivd@tapr.org>
Date: Mon, 8 Jun 1998 10:37:20 -0500
To: "HF SIG list   mailing"<hfsig@tapr.org>, " Spread Spectrum "<ss@tapr.org>,
        " TAPR/AMSAT DSP "<dsp@tapr.org>,
        "APRS SIG list   mailing"<aprssig@tapr.org>,
        "NETSIG list   mailing"<netsig@tapr.org>,
        "BBS SIG list   mailing"<bbssig@tapr.org>,
        " tacgps "<tacgps@tapr.org>, aprsnews@tapr.org, mic-e@tapr.org,
        TAPR Regional Freq <regional_freq@tapr.org>
Message-ID: <v04003a0cb1a1b453317a@[207.43.172.66]>
Rendered body type: text/plain

For those who want to know.

Dorothy was released from the hospital last Friday afternoon and has been
resting at the house (TAPR Office ;-) since then. The surgery went very
well and there appears to be no complications, except that she doesn't like
the really long scar on her belly.

We (Bill Jones and I) have told Dorothy she cannot step one foot into the
TAPR office until next week sometime. Thus, expect kits and orders to
start getting out the door in another 7-10 days. There is a bit of a pile
being generated by this down time, so it will probably be a week or so
after we open back up that we get caught up on everything.

Dorothy wants to thank everyone that thought of her during this ordeal and
she looks forward to getting back into the swing of things.

Cheers - Greg Jones, WD5IVD

Greg Jones, WD5IVD   Austin, Texas
wd5ivd@tapr.org   http://www.tapr.org/~wd5ivd

Real World, The n.:
        5. Anywhere outside a university. "Poor fellow, he's left UT

Austin and gone into the real world."

13. New Audio Segments

From: "Greg Jones, WD5IVD" <wd5ivd@tapr.org>
Date: Fri, 12 Jun 1998 13:39:48 -0500
To: " Spread Spectrum "<ss@tapr.org>
Message-ID: <v04003a1cb1a7261609ac@[207.8.125.50]>
Rendered body type: text/plain

Several new Audio segments covering Spread Spectrum and the radio projects
are available in the TAPR Dayton Forum and TPRS Digital Forum.

http://www.tapr.org/tapr/html/virtual.html

Greg

Greg Jones, WD5IVD Austin, Texas
wd5ivd@tapr.org http://www.tapr.org/~wd5ivd

Real World, The n.:
  5. Anywhere outside a university. "Poor fellow, he's left UT
Austin and gone into the real world."

14. FNG to this SIG, and SS in general...

From: Robert_Manzanares@racalcomm.com
Date: Fri, 12 Jun 1998 16:06:21 -0400
To: ss@tapr.org
Message-ID: <7C54791B76BFD111BCEE0060979F982F13EEDE@rci03.racalcomm.com>
Rendered body type: text/plain

I'm relatively new to SS, and other than reading the ARRL book, I've no
experience with this mode. What's the best ways to start out. Which is
easier - Direct Sequencing, or Frequency Hopping? Keeping in mind I'm
on a budget, I was thinking of kludging together some simple DS stuff in
the 33cm band.

The ironic thing is the company I work for builds FH radios, but it's
all DSP, and not the kind of information I'd have access to anyway.

15. Test; no mail

From: "pmarkham" <pmarkham@upmail.com>
Date: Sat, 20 Jun 1998 08:47:28 -0400
To: ss@tapr.org
Message-ID: <199806201239.IAA00464@name>
Rendered body type: text/plain

Test

  The meek will not inherit the Earth.

16. Is there an active ss usenet newsgroup/reflector?

From: "pmarkham" <pmarkham@upmail.com>
Date: Sat, 20 Jun 1998 09:37:27 -0400
To: ss@tapr.org
Message-ID: <199806201329.JAA00484@name>
Rendered body type: text/plain

Assuming that I am not missing posts to this group, is there a living ss
 newsgroup or reflector discussing, actively, the technical aspects of ss?

                                    Pete/wa4hei

  The meek will not inherit the Earth.

17. Re: [SS:1985] Test; no mail

From: "Mike Rafferty" <mraff@zoomnet.net>
Date: Sat, 20 Jun 1998 11:20:29 +0000
To: ss@tapr.org
Message-ID: <199806201520.LAA15818@mail.zoomnet.net>
Rendered body type: text/plain

>   The meek will not inherit the Earth.

There will be no earth!!!!!!!!!!!!!

18. Re: 900 Mhz Transceiver schedule

From: "Louis Cobet" <louis_cobet@email.msn.com>
Date: Sat, 20 Jun 1998 16:53:49 -0700
To: <ss@tapr.org>
Message-ID: <001301bd9ca6$ac306980$811a2599@MSNLouisCobet>
Rendered body type: text/plain

I listened to the RealAudio (R) files from Dayton and TPRS. The 902 Mhz. band SS project is very exciting.

I am investigating antennas to use both for omnidirectional and for point to point use on this band. I am also trying to figure out how to build a cheap frequency sweeper to test antennas. Of course, the unit itself is an excellent signal source. If the SS transceiver is going to be available soon, I won't waste my efforts on a sweeper.

Without pinning the project developers down to a rigid schedule, is it possible to get an approximate timetable for the release? Something like Spring, 99 or whatever would be helpful.

Thanks.

Louis Cobet, K6MDH

louis_cobet@email.msn.com

19. Re: 900 Mhz Transceiver schedule

From: "Louis Cobet" <louis_cobet@email.msn.com>
Date: Sat, 20 Jun 1998 16:54:56 -0700
To: <ss@tapr.org>
Message-ID: <001b01bd9ca6$d4108ac0$811a2599@MSNLouisCobet>
Rendered body type: text/plain

I listened to the RealAudio (R) files from Dayton and TPRS. The 902 Mhz. band SS project is very exciting.

I am investigating antennas to use both for omnidirectional and for point to point use on this band. I am also trying to figure out how to build a cheap frequency sweeper to test antennas. Of course, the unit itself is an excellent signal source. If the SS transceiver is going to be available soon, I won't waste my efforts on a sweeper.

Without pinning the project developers down to a rigid schedule, is it possible to get an approximate timetable for the release? Something like Spring, 99 or whatever would be helpful.

Thanks.

Louis Cobet, K6MDH

louis_cobet@email.msn.com

20. TAPR 900Mhz SS Radio Project Update

From: "Greg Jones, WD5IVD" <wd5ivd@tapr.org>
Date: Mon, 29 Jun 1998 16:40:40 -0500
To: " Spread Spectrum "<ss@tapr.org>
Message-ID: <v04003a0db1bdba424b8d@[207.8.125.50]>
Rendered body type: text/plain

http://www.tapr.org/tapr/html/taprfhss.html has been updated with notes from the June meeting.

Greg

Greg Jones, WD5IVD Austin, Texas
wd5ivd@tapr.org http://www.tapr.org/~wd5ivd

Real World, The n.:
5. Anywhere outside a university. "Poor fellow, he's left UT Austin and gone into the real world."

21. Re: [SS:1990] TAPR 900Mhz SS Radio Project Update

From: "Lyle V. Johnson" <johnson@mmsi.com>
Date: Mon, 29 Jun 1998 16:18:15 -0700
To: ss@tapr.org

Message-ID: <359820B7.C1599C95@mmsi.com>
Rendered body type: text/plain

Greg Jones, WD5IVD wrote:
>
> http://www.tapr.org/tapr/html/taprfhss.html has been updated with
> notes
> from the June meeting.
>

Greg,

The pointer refers back to the january meeting notes. I diddled around
and discovered it should point to ....062898.html rather than
...010398.html.

Cheers,

--
Lyle Johnson   Modular Mining Systems, Inc.
VP Product Eng 3289 East Hemisphere Loop
                Tucson AZ 85706-5028
Voice: +1.520.746.9127
FAX: +1.520.889.5790
Internet: johnson@mmsi.com

22. Re: [SS:1991] Re: TAPR 900Mhz SS Radio Project Update

From: "Greg Jones, WD5IVD" <wd5ivd@tapr.org>
Date: Mon, 29 Jun 1998 18:40:07 -0500
To: ss@tapr.org
Message-ID: <v04003a13b1bdd5cac717@[207.8.125.50]>
Rendered body type: text/plain

Thanks. I forgot to edit the main html link.

Cheers - Greg

>Greg Jones, WD5IVD wrote:
>>
>> http://www.tapr.org/tapr/html/taprfhss.html has been updated with
>> notes
>> from the June meeting.
>>
>
>Greg,
>
>The pointer refers back to the january meeting notes. I diddled around
>and discovered it should point to ....062898.html rather than
>..010398.html.
>
>Cheers,
>
>--
>Lyle Johnson   Modular Mining Systems, Inc.
>VP Product Eng 3289 East Hemisphere Loop
>   Tucson AZ 85706-5028
>Voice: +1.520.746.9127
>FAX: +1.520.889.5790
>Internet: johnson@mmsi.com

Greg Jones, WD5IVD   Austin, Texas
wd5ivd@tapr.org   http://www.tapr.org/~wd5ivd

Real World, The n.:
        5. Anywhere outside a university. "Poor fellow, he's left UT
Austin and gone into the real world."

23. Re: [SS:1990] TAPR 900Mhz SS Radio Project Update

From: Bob Lorenzini <hwm@netcom.com>
Date: Mon, 29 Jun 1998 18:47:21 -0700 (PDT)
To: ss@tapr.org
Message-ID: <Pine.LNX.3.95.980629183903.108A-100000@la.wd6dod.ampr.org>
Rendered body type: text/plain

Thanks for the update Greg. This project is of greater magnitude than
I could have imagined and obviously the most challenging TAPR has

attempted to date. It helps to keep our spirits up when we hear that progress is being made. Thanks Guys.

Bob - wd6dod

July 1998

Original source file: ss.9807
Source: http://ftp.tapr.org/tapr_history/SIG_Archives/spread-spectrum-sig/mail_archive/ss.9807

1. New stuff on the SS web page

```
From: "Greg Jones, WD5IVD" <wd5ivd@tapr.org>
Date: Fri, 3 Jul 1998 00:30:45 -0500
To: " Spread Spectrum "<ss@tapr.org>
Message-ID: <v04003a05b1c21c411c34@[207.8.125.50]>
Rendered body type: text/plain
```

Several new things have been added to the TAPR SS web page:

Tim Shepard's thesis "Decentralized Channel Mgmt in Scalable Multihop SS Packet Networks". This is the basis of his talk at the upcoming DCC in Chicago. (http://www.tapr.org/dcc)

James A. Vincent, G1PVZ, has been kind enough to allow us to place his article entitled "Voice Link Over Spread Spectrum Radio" on the web page. Steve Bible, N7HPR, scanned and generated all the page. It is a very good read.

Also, we have audio from the 1998 TPRS Digital Forum at HamCom, Arlington, Texas and the 1998 TAPR Digital Forum at Dayton Hamvention. Both forums had talks about SS at them and the TAPR radio project.

Cheers -- Greg

Greg Jones, WD5IVD Austin, Texas
wd5ivd@tapr.org http://www.tapr.org/~wd5ivd

Real World, The n.:
5. Anywhere outside a university. "Poor fellow, he's left UT Austin and gone into the real world."

2. Re: [SS:1970] 1998 ARRL and TAPR Digital Communications Conference

```
From: mdmiller@eaze.net
Date: Mon, 06 Jul 1998 22:11:21 -0500
To: ss@tapr.org
Message-ID: <3.0.5.32.19980706221121.007feda0@mail.eaze.net>
Rendered body type: text/plain
```

Greg,

I attended the DCC last year in Baltimore, and what made it interesting for me was the GPS and Spread Spectrum seminars. Looking through the schedule I don't see any of these subjects listed this year (except for APRS GPS).

Will there by any seminars on GPS disciplining of oscillators?

What type of Spread Spectrum information can I expect?

73
Mark Miller
N5RFX

At 02:48 PM 5/31/98 -0500, you wrote:

>Topics will include APRS, satellite communications, TCP/IP, digital radio,
>Spread Spectrum, and many others. Come to the conference and hear these
>topics presented by the experts! Don't miss this opportunity to listen and
>talk to others in these areas.
>
>-----

>What can you expect during the 1998 ARRL and TAPR Digital Communications
>Conference?
>
>* SIGs (Special Interest Groups) get-togethers on Saturday, following
> the banquet
>
>If you have attended a Digital Communications Conference in the past,
>remember how much fun it was discussing the latest developments into the
>wee hours! If you have never been to a Digital Communications Conference,
>then make your plans now to attend and find out how much fun they can be.

Regards
Mark Miller

3. Smal Digital SS projects?

From: "Marcel Bos" <mackel@hotmail.com>
Date: Tue, 07 Jul 1998 03:48:47 PDT
To: ss@tapr.org
Message-ID: <19980707104847.8529.qmail@hotmail.com>
Rendered body type: text/plain

Hi I havn't been so active in this area.. Just looking for a
FAQ and WHERE I can find a easy Amature project in SS?

_____
Get Your Private, Free Email at http://www.hotmail.com

4. Re: [SS:1996] Smal Digital SS projects?

From: "Nitin Jain" <nitin_jain_india@hotmail.com>
Date: Tue, 07 Jul 1998 07:13:50 PDT
To: ss@tapr.org
Cc: mackel@hotmail.com
Message-ID: <19980707141353.10037.qmail@hotmail.com>
Rendered body type: text/plain

Hi Mr. Bos,
As such there does not seem to be there any specific FAQ for ss.
U can access www.sss-mag.com site which is one stop for all in SS.
I have seen some small amature project details there in the area of
Frequency hopping.
Get back if U have any doubt.
Bye
nitin jain
CRL-BEL, INDIA
nitin_jain_india@hotmail.com

>Date: Tue, 7 Jul 1998 05:50:18 -0500 (CDT)
>Reply-To: ss@tapr.org
>From: "Marcel Bos" <mackel@hotmail.com>
>To: ss@tapr.org
>Subject: [SS:1996] Smal Digital SS projects?
>
>
>Hi I havn't been so active in this area.. Just looking for a
>FAQ and WHERE I can find a easy Amature project in SS?
>
>
>
>_____
>Get Your Private, Free Email at http://www.hotmail.com
>
>

_____
Get Your Private, Free Email at http://www.hotmail.com

5. Re: [SS:1995] Re: 1998 ARRL and TAPR Digital Communications

From: "Greg Jones, WD5IVD" <wd5ivd@tapr.org>
Date: Tue, 7 Jul 1998 10:33:23 -0500
To: ss@tapr.org
Message-ID: <v04003a13b1c7edd0bce4@[207.8.125.50]>
Rendered body type: text/plain

>Greg,
>
>I attended the DCC last year in Baltimore, and what made it interesting for
>me was the GPS and Spread Spectrum seminars. Looking through the schedule
>I don't see any of these subjects listed this year (except for APRS GPS).
>
>Will there by any seminars on GPS disciplining of oscillators?
>
>What type of Spread Spectrum information can I expect?

Well, every year is different. I think if you enjoyed the SS talks last
year on Sunday you will again like the seminar we have put together for
Sunday. Both Lyle's and Tim's talks will be very good and Tim's very
relevant to generating networks using Spread Spectrum techniques.

As to GPS disciplining of oscillators, that will depend if someone submits a paper or not for the main session ? Hopefully, Tom Clark or someone else working in this area will be presenting something -- but we have little control from year to year on what people do present in the paper session. I am sure it will probably come up in some form during the intro sesions on GPS most likey.

But as always, if the area you are interested in is not actually being formally presented, you have the chance to meet in person with the people that know it, since they will be there. Just a matter of coming and saying hello to them and asking a question.

Hope to see you in Chicago. http://www.tapr.org/dcc

Don't forget that the paper deadline is Aug 15th!

Cheers - Greg

Greg Jones, WD5IVD Austin, Texas
wd5ivd@tapr.org http://www.tapr.org/~wd5ivd

Real World, The n.:
        5. Anywhere outside a university. "Poor fellow, he's left UT Austin and gone into the real world."

6. Costas Loop Design

From: Dick Bingham <dickrb@lsid.hp.com>
Date: Tue, 07 Jul 1998 10:02:51 -0700
To: ss@tapr.org
Message-ID: <35A254BB.CECDF93C@lsid.hp.com>
Rendered body type: text/plain

Greetings
7 July, 1998

I am interested in experimenting with a Costas Loop in a DSSS system. The block
diagram for such a loop appears simple enough but I am interested in and puzzled
by the 3rd mixer, whose two inputs are the "I" and "Q" channel data. These inputs
are nearly at "dc" and that makes it hard to use a mixer like the standard DBM
(SRA-1 etc.). Does anyone have a "favorite design" for the 3rd mixer circuitry that
can be shared?

I am interested in circuitry that can be implemented by using commonly available
TTL and analog parts. My applications/experiments are being done at HF on 80M
with the following equipment:

-- 10MHz TCXO system clocks
-- 50KHz chip-clock
-- 25KHz PLL reference to generate 3575KHz carrier frequency
-- (2^7 - 1) PRN code
-- +7dBm at 1st comb-line

My DSSS transmissions have been authorized by the FCC's Seattle area office and
have taken place for the past year over a 90 mile path. I am interested in using a
Costas-Loop to help establish system synch and information extraction (spotted-
owl hoots and other local forest noises as audio/data input to the ADC at TX end).

My present system is fairly primitive in that the chip-clock is derived from an ~10MHz
oscillator and switched to the local "long-term-stable" 10MHz TCXO once synch is
established. This allows me to maintain the link in the presence of co-channel user
QRM and long (10's of minutes) QSB fades.

I have recently received authorization to continue these tests for

another year and
plan some FHSS tests which will use an ~5MHz FH PLL I developed that
has 127
frequency steps. This L.O. will be mixed with a 9MHz L.O. to allow FHSS
experiments on 80M and 20M. All of these L.O.'s are derived from the
10MHz
TXCO's to reduce frequency uncertainty issues which is necessary when
dealing
with weak-signal HF-propagated signals.

Any Costas-Loop design schematics will be appreciated and credit given
if any of my
work is published.

73 de w7wkr

Dick Bingham
5719 16th Ave N.E.
Seattle, WA 98105

(206) 527-3468

7. Re: [SS:1999] Costas Loop Design

From: Jacob W Janovetz <janovetz@ews.uiuc.edu>
Date: Tue, 7 Jul 1998 12:46:41 -0500 (CDT)
To: ss@tapr.org
Message-ID: <199807071746.MAA19146@eesn18.ews.uiuc.edu>
Rendered body type: text/plain

> Greetings
> 7 July, 1998

Howdy...

> I am interested in experimenting with a Costas Loop in a DSSS system.
> The block
> diagram for such a loop appears simple enough but I am interested in and
> puzzled
> by the 3rd mixer, whose two inputs are the "I" and "Q" channel data.

I'm not sure I know what you mean by 3rd mixer. If it's where I think
it is in the loop (just before the VCO), it's an adder (or subtractor).
The idea is to try to force the outputs from I and Q to be equal.
This pushes the constellation points to the corner of the constellation.

The usual four-phase costas loop phase detector consists of two
hardlimiters and two mixers and the summer, so the output of the
phase detector is:

```
   pdout = i*sign(q) - q*sign(i)
```

or

```
   pdout = q*sign(i) - i*sign(q)
```

depending on the sign of the slope of the VCO you're designing for.

If I misunderstood, I apologize.

> These inputs
> are nearly at "dc" and that makes it hard to use a mixer like the
> standard DBM
> (SRA-1 etc.). Does anyone have a "favorite design" for the 3rd mixer
> circuitry that
> can be shared?
>
> I am interested in circuitry that can be implemented by using commonly
> available
> TTL and analog parts. My applications/experiments are being done at HF
> on 80M
> with the following equipment:
>
> -- 10MHz TCXO system clocks
> -- 50KHz chip-clock
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> -- (2^7 - 1) PRN code
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>
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> office and
> have taken place for the past year over a 90 mile path. I am interested
> in using a
> Costas-Loop to help establish system synch and information extraction
> (spotted-
> owl hoots and other local forest noises as audio/data input to the ADC
> at TX end).
>
> My present system is fairly primitive in that the chip-clock is derived
> from an ~10MHz
> oscillator and switched to the local "long-term-stable" 10MHz TCXO once
> synch is
> established. This allows me to maintain the link in the presence of
> co-channel user
> QRM and long (10's of minutes) QSB fades.
>
> I have recently received authorization to continue these tests for
> another year and
> plan some FHSS tests which will use an ~5MHz FH PLL I developed that
> has 127
> frequency steps. This L.O. will be mixed with a 9MHz L.O. to allow FHSS
> experiments on 80M and 20M. All of these L.O.'s are derived from the
> 10MHz
> TXCO's to reduce frequency uncertainty issues which is necessary when
> dealing
> with weak-signal HF-propagated signals.
>
> Any Costas-Loop design schematics will be appreciated and credit given
> if any of my
> work is published.
>
> 73 de w7wkr
>
> Dick Bingham
> 5719 16th Ave N.E.
> Seattle, WA 98105
>
> (206) 527-3468

This word sounds pretty cool. Do you have any web page or anything
describing this in more detail?

   Cheers,
   Jake

--
   janovetz@uiuc.edu | Once you have flown, you will walk the earth with
 University of Illinois | your eyes turned skyward, for there you have been,
                        | there you long to return.   -- da Vinci
        PP-ASEL | http://www.ews.uiuc.edu/~janovetz/index.html

8. Re: [SS:1999] Costas Loop Design

From: Jeffrey Austen <jausten@tntech.edu>
Date: Tue, 07 Jul 1998 13:07:53 -0600
To: ss@tapr.org
Message-ID: <l03130301b1c821e79133@[149.149.39.26]>
Rendered body type: text/plain

>I am interested in experimenting with a Costas Loop in a DSSS system.
>The block
>diagram for such a loop appears simple enough but I am interested in and
>puzzled
>by the 3rd mixer, whose two inputs are the "I" and "Q" channel data.
>These inputs
>are nearly at "dc" and that makes it hard to use a mixer like the
>standard DBM
>(SRA-1 etc.). Does anyone have a "favorite design" for the 3rd mixer
>circuitry that
>can be shared?

Analog Devices makes a series of multipliers that work well in this
application. Check out the AD532, AD 632 and similar products.

We've also tried the Motorola MC1495 / MC1496 parts and found those to be
difficult to work with because they are not designed to be easily DC
coupled.

Jeff, k9ja

Jeffrey Austen | Tennessee Technological University
jausten@tntech.edu | Box 5004
+1-931-372-3485 | Cookeville Tennessee 38505 U.S.A.

August 1998

Original source file: ss.9808
Source: http://ftp.tapr.org/tapr_history/SIG_Archives/spread-spectrum-sig/mail_archive/ss.9808

1. Re: 900 MHz ss project

From: "Louis Cobet" <louis_cobet@email.msn.com>
Date: Tue, 4 Aug 1998 21:07:42 -0700
To: <ss@tapr.org>
Message-ID: <002d01bdc026$99193c20$d51c2599@MSNLouisCobet>
Rendered body type: text/plain

When TAPR goes into beta on the 900 MHz. project, I would be interested in participating. The San Francisco bay area should be very interesting to test in.

Louis Cobet, K6MDH
louis_cobet@email.msn.com

2. Re: 900 MHz ss project

From: "Paul Christenson" <n3eop@hotmail.com>
Date: Wed, 05 Aug 1998 16:23:13 PDT
To: ss@tapr.org
Message-ID: <19980805232313.6452.qmail@hotmail.com>
Rendered body type: text/plain

>When TAPR goes into beta on the 900 MHz. project, I would be
>interested in participating. The San Francisco bay area should be
>very interesting to test in.

Same here. It'll be interesting to measure its performance against some of our older (900 MHz part 15) DS stuff. (I have access to all the neat test equipment here at Cylink Wireless.)

de N3EOP

_____
Get Your Private, Free Email at http://www.hotmail.com

3. 1998 ARRL and TAPR Digital Communications Conference

From: "Greg Jones, WD5IVD" <wd5ivd@tapr.org>
Date: Sun, 9 Aug 1998 12:20:14 -0600
To: "TAPR-BB list mailing"<tapr-bb@tapr.org>
Cc: "HF SIG list mailing"<hfsig@tapr.org>, " Spread Spectrum "<ss@tapr.org>,
" TAPR/AMSAT DSP "<dsp@tapr.org>,
"APRS SIG list mailing"<aprssig@tapr.org>,
"NETSIG list mailing"<netsig@tapr.org>,
"BBS SIG list mailing"<bbssig@tapr.org>,
" tacgps "<tacgps@tapr.org>, aprsnews@tapr.org, mic-e@tapr.org,
TAPR Regional Freq <regional_freq@tapr.org>
Message-ID: <v04011707b1f39762e9cf@[168.191.230.109]>
Rendered body type: text/plain

1998 ARRL and TAPR Digital Communications Conference
September 25-27, 1998
Chicago, Illinois (minutes from O'Hare Airport)

Web: http://www.tapr.org/dcc

The 1998 ARRL and TAPR Digital Communications Conference will be held September 25-27, 1998, in Chicago, Illinois. This year's conference location is the Holiday Inn Rolling Meadows, just minutes from O'Hare Airport.

Not only is the Digital Communications Conference technically stimulating, it is a weekend of fun for all who have more than a casual interest in any of the ham digital communications modes. This includes APRS operators, digital networks, software writers, modem designers, and digital satellite enthusiasts. The ARRL and TAPR Digital Communications Conference is for all levels of digital operators -- a must conference to attend to become active on a national level. Now, more than ever, amateur radio needs this great meeting of the minds because it is important that we demonstrate a continued need for the frequency allocations we have by pushing forward and documenting our achievements. The ARRL and TAPR Digital Communications Conference is one of the few ways to record our accomplishments and

challenge each other to do more.

A Conference for the Beginner, Too

The conference is not just for the digital expert. This year's conference again provides multiple session tracks for beginning, intermediate, and advanced presentations on selected topics in digital communications. Topics will include APRS, satellite communications, TCP/IP, digital radio, Spread Spectrum, and many others. Come to the conference and hear these topics presented by the experts! Don't miss this opportunity to listen and talk to others in these areas.

Symposia and Seminars

In addition to the presentation of papers on Saturday, three symposia/seminars will be held. These sessions are provided to allow those with additional time and interest to make the most of the Digital Communications Conference. For those who may have interest in just one symposium or seminar, registration for the conference is not required to attend these activities. This allows maximum flexibility for those who may want to participate during the Digital Communications Conference, but do not have an entire weekend to devote to the event.

The Second APRS National Symposium will be held on Friday and will be moderated by Steve Dimse, K4HG (the developer of javAPRS). It will likely include many APRS software authors, such as Bob Bruninga, WB4APR (the father of APRS), Keith Sproul, WU2Z, Mark Sproul, KB2ICI (the developers of MacAPRS and WinAPRS), Brent Hildebrand, KH2Z (the developer of APRSPLUS), and other nationally-known APRS leaders. Join this group for the afternoon and evening for in-depth discussions and presentations on the current and future status of APRS. This is a unique opportunity to gain insight into this fast-growing digital aspect of amateur operations that combines computers, packet radio, and GPS (Global Positioning System).

Starting late Friday afternoon, a half-day seminar titled "Infrastructureless Technologies in Amateur Radio," presented by Don Lemke, WB9MJN, will cover the pros and cons of DDMA (directivity division multiple access, a proposed infrastructureless technique) versus hubbed (cellular style) and other infrastructure dependent techniques, the basic problem of megabaud rate communications into the ham QTH, and some techniques for channel-area acquisition including full duplex/asynchronous versus simplex/synchronous radio/acquisition concepts. This seminar will start late enough on Friday afternoon to allow those flying that day to attend the seminar.

The Sunday morning seminar will be a combination of two different talks that will make one excellent seminar. The first presentation, by Lyle Johnson, WA7GXD, will focus on the upcoming RUDAK digital communications system scheduled to fly on the AMSAT Phase 3D satellite in the near future. Lyle will discuss features, systems design, integration, and experiments. The goal of the presentation is to zero in on the communications capabilities of RUDAK, the performance to be expected from the 153k6 PSK system, the limitations and capacities of the DSP modems, user requirements for receiving RUDAK, requirements for transmitting to RUDAK, and how amateurs can work to make ground operations a reality once the satellite is in operation. Information on how to submit a proposal for experimental time on RUDAK will be presented. The second presentation will be by Tim Shepard, KD1KY, regarding "Packet Radio Networks with Millions or Billions of Stations." This talk will present concepts and materials that make you think about different possibilities of networking in the future. Both Lyle's and Tim's presentations focus on different aspects of future digital communications possibilities.

Third Annual ARRL and TAPR DCC Student Papers Award

The deadline for the third annual ARRL and TAPR Student papers is past, please think about having students submit next year for the travel awards. TAPR and the ARRL especially welcome papers from full-time students to compete
for these student papers award. Two $500 travel awards may be
given, one in each of the following categories: a) best
technical/theory-oriented paper by a student, and b) best educational or community-oriented application paper by a student. The paper should relate

directly to a wireless digital communication topic (see the guidelines for more information). Papers co-authored by educators or telecommunications professionals are also eligible for this award as long as a student is the first author. The deadline for receipt of finished student paper manuscript is June 20, 1999. Please note that this deadline is different from the general conference paper submission date. For full details and paper guidelines contact TAPR or browse to http://www.tapr.org/dcc.

Call for Conference Proceeding Papers

Anyone interested in digital communications is invited to submit a paper for publication in the Conference Proceedings. Presentation at the conference is not required for publication. The primary purpose of the conference is to communicate ideas and techniques regarding digital communications. Papers written in an informal style are welcome, as well as those written to academic standards. If you know of someone who is doing great things with digital communications, be sure to tell them about this! Papers are due by August 15, 1998, and should be submitted to Maty Weinberg, ARRL, 225 Main Street, Newington, CT 06111, or via e-mail to lweinberg@arrl.org. The paper submission guidelines are available on-line (http://www.tapr.org/dcc).

Local/International Co-Host

The 1998 ARRL and TAPR Digital Communications Conference will be co-hosted by Chicago Amateur Packet Radio Association (CAPRA). CAPRA is one of the oldest packet radio groups in the US. It focuses on education about amateur packet radio, coordination of joint efforts of hams interested in packet radio, and technical and equipment support for a sound packet network in the Chicago area. They have had high-speed packet networks operational since the mid-1980s. Visit the CAPRA Web site at http://www.imaxx.net/capra for more information.

PRUG (Packet Radio User Group of Japan) will be the first International co-host of the ARRL and TAPR Digital Communications Conference. The conference is proud to welcome PRUG as part of the conference. PRUG will be hosting an informal social Friday evening after the seminar and symposium are completed. Visit http://www.prug.or.jp for more information about the organization.

What can you expect during the 1998 ARRL and TAPR Digital Communications Conference?

* A full day of papers, breakout sessions, and selected topics on Saturday for the beginner to advanced amateur digital enthusiast.

* Three seminars/symposia
  Friday (1 PM)
  - Second Annual APRS National Symposium,
    moderated by Steve Dimse, K4HG

  Friday (3 PM)
  - Infrastructure Technologies in Amateur Radio
    conducted by Don Lemke, WB9MJN

  Sunday (8:30 AM)
  - RUDAK Future Operations and Experimentations
    by Lyle Johnson, WA7GXD
  - Packet Radio Networks with Millions or Billions of Stations
    by Tim Shepard, KD1KY

* Third Annual Student Paper Awards.

* TAPR Membership Meeting

* A banquet with special guest speaker Steve Roberts, N4RVE, of Nomadic Research Labs. Creator of the Winnebiko and Behemoth high-tech recumbent bicycles. His current project is focused on Microship technology (http://www.microship.com/).

* SIGs (Special Interest Groups) get-togethers on Saturday, following the banquet

*   Informal get-togethers throughout the weekend

*   A facility that is perfect for this type of conference

*   Informal engineering discussions/demonstration areas

*   Motorola Museum located in the area.

*   An event at which the most important new developments in amateur
    digital communications are announced

*   Digital 'movers and shakers' from all over the world in attendance

---

Conclusion

If you have attended a Digital Communications Conference in the past,
remember how much fun it was discussing the latest developments into the
wee hours! If you have never been to a Digital Communications Conference,
then make your plans now to attend and find out how much fun they can be.

There are few activities where your participation can be so much fun and so
important! You will be able to get together with colleagues from all over
the world and bring each other up to date on your latest work. Experience
all this and more for an unforgettable weekend of ham radio and digital
communications. Make your travel and lodging arrangements now. We hope to
see you at the ARRL and TAPR Digital Communications Conference, September
25-27!

Full information on the conference and hotel information can be obtained by
contacting Tucson Amateur Packet Radio, 8987-309 E. Tanque Verde Road #337,
Tucson, AZ 85749-9399, phone 940-383-0000, fax 940-566-2544, e-mail
tapr@tapr.org, browse www.tapr.org/dcc.

Sincerely,

   Steve Ford, WB8IMY, ARRL Conference Co-Chair
   Greg Jones, WD5IVD, TAPR Conference Co-Chair
   Steve Stroh, N8GNJ, Conference Manager
   Mark J. Thompson, WB9QZB, Local Host Liaison
   Carl Bergstedt, K9VXW, Local Host Liaison

Note: If you need conference handouts or flyers for ham club meetings,
contact TAPR to get what you need!

Hotel Information

Conference presentations, meetings, and seminars will be held at the
Holiday Inn Rolling Meadows. Special DCC rooms rates are $85 per night.
When making reservations with the hotel, be sure to indicate you are
attending the ARRL and TAPR DCC in order to get the discount. It is highly
recommended that you book your room prior to arriving. A block of 75 rooms
is reserved until August 31, 1998. After the 75 rooms are booked, rooms
will only be available in nearby hotels, so be sure to book your rooms
early! The hotel provides transportation to and from O'Hare Airport.
Please contact the hotel to arrange specific transportation needs.

   Holiday Inn Rolling Meadows (conference hotel)
   3405 Algonquin Rd
   Rolling Meadows, IL 60008
   Phone 847-259-5000, fax 847-259-0597

Tucson Amateur Packet Radio
8987-309 E Tanque Verde Rd #337 * Tucson, Az * 85749-9399
---
e-mail: tapr@tapr.org   web: <http://www.tapr.org/>
ftp: ftp.tapr.org
phone: 940-383-0000   fax: 940-565-2544
---

4. Detroit Spread Spectrum?

From: James Clay French KD4DLA <kd4dla@amsat.org>
Date: Wed, 19 Aug 1998 16:08:22 -0400
To: ss@tapr.org

Message-ID: <35DB30B6.24D1@amsat.org>
Rendered body type: text/plain

Just wondering if there is anyone in the Detroit/Downriver,MI area using
or interested in Spread Spectrum?

James KD4DLA

5. Re: [SS:2005] Detroit Spread Spectrum?

From: Jeff King <jeff@aerodata.net>
Date: Thu, 20 Aug 1998 04:49:08 -0400
To: ss@tapr.org, James Clay French KD4DLA <kd4dla@amsat.org>
Message-ID: <3.0.5.32.19980820044908.008b5720@aerodata.net>
Rendered body type: text/plain

James:

I've been using (and this is coming over) a pair of Freewaves
to get to my local ISP (about 2 miles) for the last 2 years or
so. These are 173kbaud frequency hoppers. I'm in Farmington about
15 miles from you. I've also got some stuff installed in Ann Arbor
but that is a commercial venture.

I also have some Lucent Wavelan cards and have used the Netwave
and Proxium units as well.

There was a group of guys in Ann Arbor (Jay Nugent, et. all) that
were going to be doing something with SS but I think they never
did anything when the TAPR deal fell through.

What did you have in mind?

Jeff wb8wka

At 03:12 PM 8/19/98 -0500, James Clay French KD4DLA wrote:
>Just wondering if there is anyone in the Detroit/Downriver,MI area using
>or interested in Spread Spectrum?
>
>James KD4DLA

| Jeff King   Aero Data Systems |
| jeff@mich.com P.O. Box 510895 |
| (248)471-1787 Livonia, MI 48151 |
|F(248)471-0279 United States |
----

6. Re: [SS:2005] Detroit Spread Spectrum?

From: "prabhakar subrahmanyam" <prabhs@hotmail.com>
Date: Thu, 20 Aug 1998 09:03:24 PDT
To: ss@tapr.org
Message-ID: <19980820160325.23146.qmail@hotmail.com>
Rendered body type: text/plain

>Just wondering if there is anyone in the Detroit/Downriver,MI area
using
>or interested in Spread Spectrum?
>
>James KD4DLA
>
>
hi i am interested in it....
but i belong to ur neighbouring state.....
prabhakar

****
S. Prabhakar
1731, Locust Place
Apartment 111
Schaumburg
Ilinois - 60173
Tel : 847-925-0509 (res)

prabhs@hotmail.com
rocketeer@goplay.com
http://www.angelfire.com/me/prabhs

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                  ******-oOOo-)_(-oOOo-******
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hey, u r born to lead, so lead, r get out of the way !!!

_____
Get Your Private, Free Email at http://www.hotmail.com

7. products for telemetry

From: Ricardo Rodrigues De Araujo <rra@fee.unicamp.br>
Date: Thu, 20 Aug 1998 13:41:04 -0300 (EST)
To: ss@tapr.org
Message-ID: <Pine.GSO.3.95.980820133207.25833A-100000@berilio.fee.unicamp.br>
Rendered body type: text/plain

Does anyone know any company that produces equipments for telemetry. I am
developing a telemetry network using SS and i haven't found any specific
pruduct for it. Currently i'm using inovonics transmiters for
home security aplications.

Thanks in advance.

Ricardo Araujo

8. Re: [SS:2005] Detroit Spread Spectrum?

From: Eric Glover <compuman@eecs.umich.edu>
Date: Thu, 20 Aug 1998 12:55:49 -0400 (EDT)
To: ss@tapr.org
Message-ID: <Pine.GSO.3.96.980820125332.28664C-100000@vulture.eecs.umich.edu>
Rendered body type: text/plain

Hey, I am a grad student at University of Michigan in Ann Arbor, and I am
hoping to find time to learn about this stuff to build a short range (1
mile) wireless lan... Ann Arbor is not immediately near downriver, but hey
same State :-)

CYA,
Eric

- -
...an enormous body of information science literature is based on work
that *uses* relevance, without throughly understanding what it
means ... without an understanding of what relevance means *to*
users, it seems difficult to imagine how a system can retrieve relevant
information *for* users. -- Schamber, 1990
- -
                  Eric Glover -- compuman@eecs.umich.edu
             Grad student hoping to finish before the year 2000!

On Wed, 19 Aug 1998, James Clay French KD4DLA wrote:

> Just wondering if there is anyone in the Detroit/Downriver,MI area using
> or interested in Spread Spectrum?
>
> James KD4DLA
>
>

9. Re: [SS:2006] Re: Detroit Spread Spectrum?

From: Eric Glover <compuman@eecs.umich.edu>
Date: Thu, 20 Aug 1998 13:12:06 -0400 (EDT)
To: ss@tapr.org
Message-ID: <Pine.GSO.3.96.980820130910.28664E-100000@vulture.eecs.umich.edu>
Rendered body type: text/plain

Hey, I am a grad student at Univ of Michigan in Ann Arbor, MI and I have
been trying to learn about this stuff to attempt to get a wireless LAN
going to conect up to campus, and some friends...can you say Quake :-)

If anyone around here (in SE Michigan area) is interested in helping me
out...Or has knowledge of this stuff drop me an e-mail.

compuman@eecs.umich.edu

I am almost tempted to just buy one of those wireless LAN kits, but so far
I have seen little for under $2K which claims to go more than 500 feet

(when near buildings)...

Thanks,
Eric

- -
...an enormous body of information science literature is based on work
that *uses* relevance, without throughly understanding what it
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> 15 miles from you. I've also got some stuff installed in Ann Arbor
> but that is a commercial venture.
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> I also have some Lucent Wavelan cards and have used the Netwave
> and Proxium units as well.
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> There was a group of guys in Ann Arbor (Jay Nugent, et. all) that
> were going to be doing something with SS but I think they never
> did anything when the TAPR deal fell through.
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> What did you have in mind?
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> Jeff wb8wka
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> At 03:12 PM 8/19/98 -0500, James Clay French KD4DLA wrote:
> >Just wondering if there is anyone in the Detroit/Downriver,MI area using
> >or interested in Spread Spectrum?
> >
> >James KD4DLA
>
> ------------------------------------
> | Jeff King   Aero Data Systems |
> | jeff@mich.com P.O. Box 510895 |
> | (248)471-1787 Livonia, MI 48151 |
> |F(248)471-0279 United States |
> ------------------------------------
>
>

10. Re: [SS:2008] products for telemetry

From: frussle@erols.com (Jake Brodsky)
Date: Thu, 20 Aug 1998 17:32:50 GMT
To: ss@tapr.org
Message-ID: <35e05b1a.18290971@smtp.erols.com>
Rendered body type: text/plain

On Thu, 20 Aug 1998 11:32:17 -0500 (CDT), you wrote:

>Does anyone know any company that produces equipments for telemetry. I am
>developing a telemetry network using SS and i haven't found any specific
>pruduct for it. Currently i'm using inovonics transmiters for
>home security aplications.

Over what distance? How much data? How fast do you want to get the
information? How much security do you need? How do you want it
displayed?

I work for a water and sewer utility with 130 remote telemetry sites.
We use 928/952 MHz radios, leased lines, and microwave networks to
collect and control utility information such as power consumption,
pressures, tank levels, and so on.

If you want further background and information, please e-mail me or
call me at work (East Coast USA) 301-206-7173.

73,

Jake Brodsky, AB3A mailto:frussle@erols.com
"Beware of the massive impossible!"

11. Re: products for telemetry

From: "Paul Christenson" <n3eop@hotmail.com>
Date: Thu, 20 Aug 1998 11:37:22 PDT
To: ss@tapr.org
Message-ID: <19980820183722.18373.qmail@hotmail.com>
Rendered body type: text/plain

>Does anyone know any company that produces equipments for telemetry.
>I am developing a telemetry network using SS and i haven't found any
>specific pruduct for it. Currently i'm using inovonics transmiters
>for home security aplications.

I normally try to keep my employment and my hobbies separate, but...

If you're looking for the radios, we can help. Fill out the inquiry form
on our web site (http://www.cylinkwireless.com/inquiry.htm), and go
from there.

I'm pretty sure we have a rep in Brazil.

Paul

Paul Christenson   Airlink Wireless Systems
Digital Hardware Engineer   A P-Com Company
Airlink Wireless Systems   910 Hermosa Ct
(Formerly Cylink Wireless)   Sunnyvale, CA 94086
408-328-5149   www.cylinkwireless.com
Paul_Christenson@p-com.com

_____
Get Your Private, Free Email at http://www.hotmail.com

12. Re: [SS:2010] Re: Detroit Spread Spectrum?

From: Jeff King <jeff@aerodata.net>
Date: Thu, 20 Aug 1998 15:53:01 -0400
To: ss@tapr.org, compuman@eecs.umich.edu
Message-ID: <3.0.5.32.19980820155301.03c91700@aerodata.net>
Rendered body type: text/plain

At 12:13 PM 8/20/98 -0500, Eric Glover wrote:
>Hey, I am a grad student at Univ of Michigan in Ann Arbor, MI and I have
>
>
>I am almost tempted to just buy one of those wireless LAN kits, but so far
>I have seen little for under $2K which claims to go more than 500 feet
>(when near buildings)...
>

Take a look at the Microwave tower on North Campus (near the ITI building).
You'll see a 900mhz Yagi up about 200 feet.... thats being driven by a
$400 Wavelan card over to a site in Dexter about 12 miles away.

Also, the UofM aerospace department is using a pair of FreeWaves in their
UAV project (its a unmanned aircraft... basically a big RC plane running
QNX in a PC-104 platform). From what they told me, its never been out of
range. Those are the OEM cards which were under $1000 each.

Like any radio project, alot depends on the antenna.

-Jeff

| Jeff King   Aero Data Systems |
| jeff@mich.com P.O. Box 510895 |
| (248)471-1787 Livonia, MI 48151 |
|F(248)471-0279 United States |
---

13. Starting on N6GN's microwave project, looking for experience

From: Robb Greathouse <atlas@quiknet.com>
Date: Fri, 21 Aug 1998 06:29:30 -0700
To: "ss@tapr.org" <ss@tapr.org>
Message-ID: <35DD763A.6F9BF56@quiknet.com>
Rendered body type: text/plain

With great trepidation I am about to start building the 2mbps microwave
link published by N6GN in Ham Radio magazine. Has anyone else tried to
build in and if so what was your experience?

Robb GreatHouse
atlas@quiknet.com

14. [SS:2013] Re: Detroit Spread Spectrum?

From: Brian Bartholomew <bb@wv.com>
Date: Fri, 21 Aug 1998 18:18:46 -0400
To: ss@tapr.org
Message-ID: <199808212218.SAA21945@battleship>
Rendered body type: text/plain

> You'll see a 900mhz Yagi up about 200 feet.... thats being driven by
> a $400 Wavelan card over to a site in Dexter about 12 miles away.

Aren't there distance limits to these inexpensive cards based on
maximum ethernet time windows? I figured these cheap cards would use
the incoming ethernet bits as the data framing, so you would be
distance limited by the CD/CSMA ethernet timings.

League for Programming Freedom (LPF) ftp://ftp.gnu.org/pub/lpf/patents.text
---
Brian Bartholomew - bb@wv.com - www.wv.com - Working Version, Cambridge, MA

15. Re: [SS:2014] Starting on N6GN's microwave project, looking for experience

From: Rhett Westerman <rhettw@premier.net>
Date: Fri, 21 Aug 1998 20:49:35 -0500
To: ss@tapr.org
Message-ID: <35DE23AF.AF0742C9@premier.net>
Rendered body type: text/plain

Robb,

 I missed this article but am interested in it.

 Which mag was this in?

Thanks

Robb Greathouse wrote:
>
> With great trepidation I am about to start building the 2mbps microwave
> link published by N6GN in Ham Radio magazine. Has anyone else tried to
> build in and if so what was your experience?
>
> Robb GreatHouse
> atlas@quiknet.com

--

Rhett Westerman
rhettw@premier.net
http://www.premier.net/~rhettw/index.htm

16. Re: [SS:2014] Starting on N6GN's microwave project

From: "Eddie HANHAM" <eddiehan@nlc.net.au>
Date: Sat, 22 Aug 1998 12:41:23 +10
To: ss@tapr.org
Cc: Robb Greathouse <atlas@quiknet.com>
Message-ID: <199808220246.VAA12967@tapr.org>
Rendered body type: text/plain

Also interested in the microwave project, have done some research
and the microwave side appears to be the easiest part. The hardest
seems to be operating ethernet cards at 2Mb. Granted one can replace
the 20Mhz crystal osc on the card with 4Mhz to bring down the
bit rate, but is the tcp/ip software out there to run a link with
possibly a lot of retransmissions, and how do "modern" ethernet cards
perform at the lower clock rate??

For those interested there is a N6gn site at TAPR where:
         Glenn Elmores 1988 Ham Radio article at
             http://www.tapr.org/~n6gn/index.html and
         the "Tech Elmers" at
             http://www.geocities.com/SiliconValley/2775/

 Would like to hear more about the software side!

eddie
VK2BEH

> Date: Fri, 21 Aug 1998 08:39:30 -0500 (CDT)
> Reply-to: ss@tapr.org
> From: Robb Greathouse <atlas@quiknet.com>
> To: ss@tapr.org
> Subject: [SS:2014] Starting on N6GN's microwave project, looking for experience

> With great trepidation I am about to start building the 2mbps microwave
> link published by N6GN in Ham Radio magazine. Has anyone else tried to
> build in and if so what was your experience?
>
> Robb GreatHouse
> atlas@quiknet.com
>
>
>

_____

Eddie HANHAM   Phone 61 2 93274118
20 HARRIS STREET   Email eddiehan@nlc.net.au
Paddington
New South Wales
AUSTRALIA 2021
_____

17. Re: [SS:2016] Re: Starting on N6GN's microwave project, looking for experience

From: Robb Greathouse <atlas@quiknet.com>
Date: Fri, 21 Aug 1998 20:51:51 -0700
To: ss@tapr.org
Message-ID: <35DE4057.B4F7EC5F@quiknet.com>
Rendered body type: text/plain

Rhett Westerman wrote:

> Robb,
>
> I missed this article but am interested in it.
>
> Which mag was this in?
>
> Thanks
>
> Robb Greathouse wrote:
> >
> > With great trepidation I am about to start building the 2mbps microwave
> > link published by N6GN in Ham Radio magazine. Has anyone else tried to
> > build in and if so what was your experience?
> >
> > Robb GreatHouse
> > atlas@quiknet.com
>
> --
>
> Rhett Westerman
> rhettw@premier.net
> http://www.premier.net/~rhettw/index.htm

  It's on the Web at http://www.tapr.org/~n6gn/index.html

18. Europeen SS ?

From: Philippe Fuchs <fuchs_@evc.net>
Date: Sat, 22 Aug 1998 12:58:11 +0200
To: ss@tapr.org
Message-ID: <35DEA442.F486CDE@evc.net>
Rendered body type: text/plain

A few remarks since I'm reading these messages, and after browsing the
n6gn web pages:

The 900 Mhz band is always mentionned as the main SS band in the US. The
problem is that in europe, this band is not allowed for ham operations.
It is used by GSM cellular mobile phones, (all digital) modulated in
GMSK with frequency hopping. Quite a complex protocol which requires
encryption and DSP for baseband modulation. The network already starts
saturating and a second band is beeing used, at about 1800MHz.
This leaves europeen hams with the 230, 1200, 2400 and 10 000 MHz bands.
I heard that some germans are doing digital hi-speed links on 10 GHz. In
France, to my knowledge, very few people (hams) are experimenting
microwave links. And less know about spread spectrum!

I as wondering if other europeens are interrested in developping SS in
europe or if they could give me more informations on things going on in
this part of the world.

Thank you.

--

    F8CND
    Philippe Fuchs
    fuchs@evc.net

19. Re: [SS:2014] Starting on N6GN's microwave project, looking for experience

From: Doug Bade <doug@clecom.com>
Date: Sat, 22 Aug 1998 13:35:38 -0400
To: ss@tapr.org
Message-ID: <3.0.32.19980822133537.00868220@en.com>
Rendered body type: text/plain

I am working on the same project, I have built the board set and am in
debugging mode. some of the fets and other stuff are hard to find, I
ordered extra's so email me when you are ready.... I also found several
sources for parts after the fact.. FAR circuits had(s) boards, some foil
errors and parts list error's... see n6gn's page at tapr for latest info...
73.. Doug. KB8GVQ

At 08:35 AM 8/21/98 -0500, you wrote:
>With great trepidation I am about to start building the 2mbps microwave
>link published by N6GN in Ham Radio magazine. Has anyone else tried to
>build in and if so what was your experience?
>
>Robb GreatHouse
>atlas@quiknet.com
>
>
>

20. Re: [SS:2020] Re: Starting on N6GN's microwave project, looking

From: Steve Sampson <ssampson@usa-site.net>
Date: Sat, 22 Aug 1998 14:17:23 -0500 (CDT)
To: ss@tapr.org
Message-ID: <199808221917.OAA17733@access.usa-site.net>
Rendered body type: text/plain

On an aside, this isn't really SS, but the GPS based oscillators would
probably be useful in future X and K band designs. Those Gunn based
units have a lot of drift. Communications Quarterly had a nice article
in their first issue which had one side track the drift. Alas, it was
a voice only design, but interesting in the use of an FM Stereo radio as the
IF and audio sections (high bandwidth--100 kHz). I thought it would be
a good system for packet, but on the order of 56 kbps rather than the
much harder 1 Mbps (harder in data pump and receiver design, etc).

I don't know if they (CQ) are still being published, but the article is
worth having. The Ham Radio article was also in the ARRL Handbook for
a few years, and may even still be included.

21. Re: [SS:2020] Re: Starting on N6GN's microwave project

From: Graham Cheater <graham.cheater@dial.pipex.com>
Date: Mon, 24 Aug 1998 20:36:18 +0100
To: ss@tapr.org
Message-ID: <35E1C0B2.BD2D8D4F@dial.pipex.com>
Rendered body type: text/plain

I am trying to get started with this project but find it almost impossible to get
'specified' or 'equivalent' part over here.

Graham Cheater G4FUA ...---...
graham.cheater@dial.pipex.com

Doug Bade wrote:

>   I am working on the same project, I have built the board set and am in
> debugging mode. some of the fets and other stuff are hard to find, I
> ordered extra's so email me when you are ready....etc.
>
> At 08:35 AM 8/21/98 -0500, you wrote:
> >With great trepidation I am about to start building the 2mbps microwave
> >link published by N6GN in Ham Radio magazine. Has anyone else tried to
> >build in and if so what was your experience?
> >
> >Robb GreatHouse
> >atlas@quiknet.com
> >
> >
> >

22. Re: Starting on N6GN's microwave project

From: Glenn Elmore <ge@sr.hp.com>
Date: Mon, 24 Aug 1998 13:34:16 -0700 (PDT)
To: ss@tapr.org
Message-ID: <199808242034.NAA22641@n6gn.sr.hp.com>
Rendered body type: text/plain

> To: ss@tapr.org
> Subject: Re: Starting on N6GN's microwave project
>
> I am trying to get started with this project but find it almost impossible to get
> 'specified' or 'equivalent' part over here.
>
> Graham Cheater G4FUA ...---...
> graham.cheater@dial.pipex.com

What parts do you need?

Glenn n6gn

23. Re: [SS:2017] Re: Starting on N6GN's microwave project

From: Luis Yanes <melus@bart.us.es>
Date: Wed, 26 Aug 1998 19:09:12 +0200
To: ss@tapr.org
Message-ID: <35E43328.5A40@esi.us.es>
Rendered body type: text/plain

Eddie HANHAM wrote:
>
> Also interested in the microwave project, have done some research
> and the microwave side appears to be the easiest part. The hardest
> seems to be operating ethernet cards at 2Mb. Granted one can replace
> the 20Mhz crystal osc on the card with 4Mhz to bring down the
> bit rate, but is the tcp/ip software out there to run a link with
> possibly a lot of retransmissions, and how do "modern" ethernet cards
> perform at the lower clock rate??

Althought this isn't SS, may be interesting.
Some time ago, whe I purchased mu 1993 ARRL handbook, I began to built
the n6gn link, and one of the first things I tried was to attempt to get
the 2Mbps from a couple of old clone ethernet cards I've arround...
but without luck. After this I got some other NE2000 clone ethernet
cards with National DP83906VL NIC, (former Unicorn, now changed
their name) UM9096 and YCL 20F001N 10BaseT pulse transformer.

The connector I was using was 10BaseT, since with the 10Base2 BNC
I can't work below 7Mbps. (with DP8392).

Changing the 20MHz xtal with a 6MHz one I got a 'reliable' link
with twisted pair cable testing. Triing to use a 4MHz don't worked,
so I can't get 2MBps. I only got 3MBps minimun.

This can be related to the digital RX clock extraction from the
manchester encoded signal, that probably in the DP83906 will be

dependant of some delay or filter. Since in the DP8390 data sheet
isn't enought detailed, and of course the operation is only specified
at 10MBps, I can't figure if there is some way to solve this.

I don't know how reliable this 3MBps will be when on a radio channel,
but with a small run of UTP of about 20m there isn't any error when
using the link test program of the boards.

After this I inserted an attenuator in the TX pair, and increassing
attenuation I got aproximately the same results with 3MBps that with
10MBps, so I guess that with a good s/n will work.

Also I added a couple of 100nF capacitors in paralell with the ones
that inputs the encoded signal to the UM9096, that may be small to
work at 3MBps, but the performance found was the same.

> For those interested there is a N6gn site at TAPR where:
>   Glenn Elmores 1988 Ham Radio article at
>   http://www.tapr.org/~n6gn/index.html and
>   the "Tech Elmers" at
>   http://www.geocities.com/SiliconValley/2775/
>
> Would like to hear more about the software side!

I think that since the software driver allows some delays, here
isn't any problem. I was using windows between the two computers
transferring files, and accessing each other resources without
problem with the 3MBps, but even slower that at 10MBps, of course.

The main concern, apart of the 3MBps instead 2MBps, is that
the maximun allowable delay is arround 584 bits (I don't remember
exactly where I read about this ethernet specifications), and
limit the maximun range of the link. At 10MBps will be about
10Km, and 80Km with 2MBps, (including path delay and TRX internal
delay ~25us. 3E8m/s*100E-9s/bit=30m/bit and then 30m/bit*584bit=17520m)
On the other hand, if this limitation is related to the NIC driver
then the range could be the same for both, and since there is
C source available arround, may be easy to cope with this.
Anyway, multipath can cause severe trouble with DX.

And If packet identification is a concern to you, then you can
burn your callsign in the ethernet address in the e2prom to use
it on the air, so every packet will carry your id, like AX25.

P.D.: I didn't finished the n6gn board becouse I can't found some
parts, and don't want to substitute with others before it worked
to avoid a headache. I'm alone in town to help me with the link,
so I haven't tried it.

I'm sorry to have written a so long message. May be not
interesting enought to post here.

--
73's de Luis

mail: melus@esi.us.es
Ampr: eb7gwl.ampr.org [44.133.41.18]
AX25: (sorry shut down)
http://www.esi.us.es/~melus/

24. SS digest 510

From: elsy <elsy@elsy.it>
Date: Fri, 28 Aug 1998 14:39:42 +0200 (MET DST)
To: ss@tapr.org
Message-ID: <199808281239.OAA05494@ns.savigliano.alpcom.it>
Rendered body type: text/plain

>--
>>
>> For those interested there is a N6gn site at TAPR where:
>>   Glenn Elmores 1988 Ham Radio article at
>>   http://www.tapr.org/~n6gn/index.html and
>>   the "Tech Elmers" at
>>   http://www.geocities.com/SiliconValley/2775/
>>
>> Would like to hear more about the software side!
>
>--

I am interested to buy all parts of   N6gn project assembled and tested.....

Where is it possible to try for it ???????

Best regards   Renato Bertello

Renato - I1BEP
via principi, 41
12042 BRA
tel 0172 432038
http://www.elsy.it
mail: elsy@elsy.it

25. Re: [SS:2024] Re: Starting on N6GN's microwave project

From: James Clay French KD4DLA <kd4dla@amsat.org>
Date: Mon, 31 Aug 1998 16:19:07 -0400
To: ss@tapr.org
Message-ID: <35EB053B.5839@amsat.org>
Rendered body type: text/plain

Looking at the N6GN project and can't locate these parts:

MC13055 FSK RECEIVER IC
SRA-1 MIXER
MC10116 LINE RECEIVER IC

Can anyone help out locating these parts and how much they cost?

James KD4DLA

26. Re: [SS:2026] Re: Starting on N6GN's microwave project

From: Doug Bade <doug@clecom.com>
Date: Mon, 31 Aug 1998 16:51:09 -0400
To: ss@tapr.org
Message-ID: <3.0.32.19980831165107.006947cc@wingate>
Rendered body type: text/plain

>Date: Mon, 31 Aug 1998 16:49:45 -0400
>To: kd4dla@amsat.org
>From: Doug Bade <doug@clecom.com>
>Subject: Re: [SS:2026] Re: Starting on N6GN's microwave project
>
>Hello James;
>
>check at www.shfmicro.com. He lists alot of good stuff including these parts
>
>At 03:25 PM 8/31/98 -0500, you wrote:
>>Looking at the N6GN project and can't locate these parts:
>>
>>MC13055 FSK RECEIVER IC
>>SRA-1 MIXER
>>MC10116 LINE RECEIVER IC
>>
>>Can anyone help out locating these parts and how much they cost?
>>
>>James KD4DLA
>>
>>
>>

27. Starting on N6GN's microwave project

From: Glenn Elmore <ge@sr.hp.com>
Date: Mon, 31 Aug 1998 14:11:13 -0700 (PDT)
To: ss@tapr.org
Cc: kd4dla@amsat.org
Message-ID: <199808312111.OAA18000@n6gn.sr.hp.com>
Rendered body type: text/plain

From: James Clay French KD4DLA <kd4dla@amsat.org>

>
> Looking at the N6GN project and can't locate these parts:
>
> MC13055 FSK RECEIVER IC
> SRA-1 MIXER
> MC10116 LINE RECEIVER IC

>
> Can anyone help out locating these parts and how much they cost?
>

Unless he is out of stock you can obtain all the above from
SHF Microwave Parts at

http://www.shfmicro.com/d&t.htm

There's also still a link to it from my pages.

Glenn Elmore n6gn

IP by radio: glenn@SantaRosa.ampr.org
   by wire: ge@sr.hp.com
                n6gn@sonic.net

|--------- N6GN's Higher Speed Packet WWW Page ---------|
| |
| http://www.tapr.org/~n6gn/index.html |
| http://www.sonic.net/~n6gn |

September 1998

Original source file: ss.9809
Source: http://ftp.tapr.org/tapr_history/SIG_Archives/spread-spectrum-sig/mail_archive/ss.9809

1. Re: [SS:2026] Re: Starting on N6GN's microwave project

From: "Marius Hauki" <Marius.Hauki@datarespons.no>
Date: Tue, 01 Sep 1998 08:45:18 +0200
To: ss@tapr.org
Message-ID: <35EB97FE.BD245302@datarespons.no>
Rendered body type: text/plain

The SRA-1 is a Mini Circuits part.
Check www.minicircuits.com - they accept Master/VISA
to my knowledge and will accept relatively small orders
for "prototyping".

Best regards
LA9EEA
Marius Hauki

James Clay French KD4DLA wrote:

> Looking at the N6GN project and can't locate these parts:
>
> MC13055 FSK RECEIVER IC
> SRA-1 MIXER
> MC10116 LINE RECEIVER IC
>
> Can anyone help out locating these parts and how much they cost?
>
> James KD4DLA

2. Study on Metricom effects on WaveLAN systems

From: Dewayne Hendricks <dewayne@warpspeed.com>
Date: Fri, 4 Sep 1998 22:55:07 -0700
To: ss@tapr.org (TAPR SS Mailing List)
Message-ID: <v0402050ab21682455969@[192.168.1.7]>
Rendered body type: text/plain

Here is a pointer to a study that examines the effect of Metricom's
Ricochet system on WaveLAN units:

<http://www.lariat.org/metricom.html>

-- Dewayne
--
~~~~~~
Dewayne Hendricks, WA8DZP ! Internet: dewayne@warpspeed.com
Warp Speed Imagineering   ! Packet Radio: WA8DZP @ K3MC.#NOCAL.CA.USA.NOAM
43730 Vista Del Mar   ! WWW: <http://www.warpspeed.com/>
Fremont, CA 94539-3204   !
Fax: (510) 770-9854   !
~~~~~~

3. digest 514

From: "Guy Story, KC5GOI" <kc5goi@infospeedway.net>
Date: Sat, 5 Sep 1998 02:22:55 -0500
To: <ss@tapr.org>
Message-ID: <01e001bdd89e$00e6ccc0$73cf2bcf@guy->
Rendered body type: text/plain

Hello group. I have finished a quick reading of hte article that Dewayne
sent to us. I found it to be very interesting and completely believe what
was found. I say this because we have had a simular discovery in Denton.
When we originally setup the SS gear in Denton the antenna's were setup
vertically due to the easy of equipment avalabilty. We found out that as
the day went on and people came home from work the throughput would drop off
to an unusable rate. We ahve since moved the antennas to a horizontal
polartity and that helped. The reasoning behind why this occured was that
when people came home and got onto their cordless 900 MHz phones, it cause
the channel avalabilty to dramaticlly drop. This was found using 1 watt
radios at each location on directional antenna's. It is not clear yet who's
end had the problem but it is suspected that it was at the home site not the
host site.
    From what I have read and seen it looks like that 2 different SS
modulation schemes may not co-exist as easily as we thought. The short term

solution is that we carfully consider what scheme is used in what
enviroment. I am not very impressed with Metricom's "crank it up till it
gets through" actions. This is one reason why I feel that we as amatuer
need to work towards producing inteligent gear. I fully support TAPR's
current project on the SS radio and hope others do to.

Guy Story, KC5GOI
Silver Dome Mobile Pk. # 79
Denton Texas, 76208
940.243.0754
kc5goi@infospeedway.net
www.infospeedway.net/~kc5goi/home.htm

4. Panasonic 2.4Ghz spread spectrum telephone

From: Robb Greathouse <atlas@quiknet.com>
Date: Sun, 06 Sep 1998 18:48:59 -0700
To: "ss@tapr.org" <ss@tapr.org>
Message-ID: <35F33B8B.405E1E11@quiknet.com>
Rendered body type: text/plain

Panasonic has just come out with a 2.4 ghz spread spectrum telephone. I
was wondering if anyone has tried taking it apart to see if the insides
could be used to modulate a gunn microwave transmitter?

I'll let you know what I find inside

Robb GreatHouse

5. Proxim Symphony Product

From: "Steve Sampson" <ssampson@usa-site.net>
Date: Sun, 6 Sep 1998 22:51:32 -0500
To: <ss@tapr.org>
Message-ID: <000301bdda12$cdd50c40$87228cd1@dodge.usa-site.net>
Rendered body type: text/plain

Proxim has begun taking orders for their new 2.4 GHz
consumer grade SS line.

Price is quite a bit cheaper than their RangeLAN products.

See: http://www.proxim.com

Steve

6. Re: [SS:2032] Panasonic 2.4Ghz spread spectrum telephone

From: "Steve Sampson" <ssampson@usa-site.net>
Date: Sun, 6 Sep 1998 23:00:56 -0500
To: <ss@tapr.org>
Message-ID: <000601bdda14$1dc9afc0$87228cd1@dodge.usa-site.net>
Rendered body type: text/plain

I think you'll find a splash of surface mount components much
like the 900 MHz phones, and custom chips galore.

You might try hooking up a couple of those AntennaVision
dishes, and you will probably have a superior product than
with a Gunn. Gunn's are pretty much dead outside of
local oscillators and CW radars...

Steve

-----Original Message-----
From: Robb Greathouse <atlas@quiknet.com>
To: ss@tapr.org <ss@tapr.org>
Date: Sunday, September 06, 1998 9:50 PM
Subject: [SS:2032] Panasonic 2.4Ghz spread spectrum telephone

>Panasonic has just come out with a 2.4 ghz spread spectrum telephone. I
>was wondering if anyone has tried taking it apart to see if the insides
>could be used to modulate a gunn microwave transmitter?
>
>I'll let you know what I find inside
>
>Robb GreatHouse

7. RE: [SS:2033] Proxim Symphony Product

From: Dirk Koopman <djk@tobit.co.uk>
Date: Mon, 07 Sep 1998 11:48:41 +0100 (BST)
To: ss@tapr.org
Message-ID: <XFMail.980907114841.djk@tobit.co.uk>
Rendered body type: text/plain

On 07-Sep-98 Steve Sampson wrote:
> Proxim has begun taking orders for their new 2.4 GHz
> consumer grade SS line.
>
> Price is quite a bit cheaper than their RangeLAN products.
>
> See: http://www.proxim.com

How much is that?

Dirk-Jan Koopman, Tobit Computer Co Ltd
At the source of every error which is blamed on the computer you will find
at least two human errors, including the error of blaming it on the computer.

8. Re: [SS:2035] RE: Proxim Symphony Product

From: "Steve Sampson" <ssampson@usa-site.net>
Date: Mon, 7 Sep 1998 10:15:24 -0500
To: <ss@tapr.org>
Message-ID: <000601bdda72$56d57ac0$87228cd1@dodge.usa-site.net>
Rendered body type: text/plain

>> Price is quite a bit cheaper than their RangeLAN products.
>>
>> See: http://www.proxim.com
>
>How much is that?

The RangeLAN's are in the $600 price class, the Symphony is
@ $150 for an ISA card or PCMCIA. Call for exact price.

I'm not affiliated with Proxim in any way, and do not know if
the product is a good value.

Steve

9. Re:[SS:2030] Study on Metricom effects on WaveLAN systems

From: "Donald V. Lemke" <wb9mjn%wb9mjn.ampr.org@uugate.ampr.utah.edu>
Date: Mon, 07 Sep 1998 10:38:13 -0500
To: ss@tapr.org
Message-ID: <35F3FDE5.10DD@uugate.aim.utah.edu>
Rendered body type: text/plain

Hi Dewayne,

    I guess the thing here is that WaveLAN radios were designed for use
in indoor LAN systems. In such systems, the computers are relatively
close, by radio standards and interferers are relatively far away.
Ricochet' is a system designed for the outdoor interferance intense
radio enviorment. So, its not suprising that it comes out ahead in this
comparison.

    Does anybody know the WaveLAN radio line-up? Is it using the
wide-banded IF to A/D converter to ASIC ? The IF in this type of radio
can be overloaded when its used in an agressive interferance enviorment.
The advantage is that indoors, shielded somewhat from interferers,
Digital Matched Filter rapid lockup is possible.

    One way around these problems is antenna directivity. Stations can
route signals around the interfering transmitters.

    In the Laramie, WY test, the one WaveLAN station was pointing at one
Ricochet transmitter, and the other at another. Or at least that is the
way i read it. So, either WaveLAN would be clobbered in a two-way
communication. It would be interesting to see if the cross pattern would
work. That is have the two beams point thru the midpoint of the line
between the two Ricochet' sites. And also at close enuf range that the
beams reject the Ricochet signals, by directivity.

    With an interfering system such as Ricochet, this would need to be
done dynamically, tho. As interfering transmitters may be mobile.

This experience is the usual problem when technology paired down to
the commercially profitable, is used beyond its intent. If we wish to do
such things, careful reengineering of network architecture is a
requirement.

--

73, Don.

AMPRNet : wb9mjn@wb9mjn.ampr.org[44.72.98.19]
Internet: wb9mjn%wb9mjn.ampr.org@uugate.aim.utah.edu
Website: http://www.qth.com/antpanel

10. Re: [SS:2037] Re:Study on Metricom effects on WaveLAN systems

From: Brett Glass <brett@lariat.org>
Date: Mon, 07 Sep 1998 21:49:00 -0600
To: ss@tapr.org
Message-ID: <199809080349.VAA00455@lariat.lariat.org>
Rendered body type: text/plain

At 10:55 AM 9/7/98 -0500, Donald V. Lemke wrote:

>   I guess the thing here is that WaveLAN radios were designed for use
>in indoor LAN systems.

Not so! Lucent specifically recommends WaveLAN for outdoor applications
at a range of 3-6 miles. See their literature!

>Ricochet' is a system designed for the outdoor interferance intense
>radio enviorment. So, its not suprising that it comes out ahead in this
>comparison.

It depends on the conditions. A pair of WaveLAN units would not fare too
badly against one pair of Ricochet "modems" in point-to-point mode, because
direct sequence spread spectrum can tolerate small "holes" in the band.
The problem is that in the Ricochet SYSTEM, many transmitters join forces
to force other units off the band.

I have dubbed this phenomenon "swarming," because is analogous to a swarm
of bees ganging up on another animal. All of the Metricom units in the same
area will all increase their power to "drown out" another system, slowing
it at best and disabling it at worst. And the coordination of frequency
hopping patterns makes matters worse. (I'm given to understand
that the FCC has recently prohibited this, but it's already present in
all the units that were manufactured up until that time, which may
be QUITE a large inventory.)

>   One way around these problems is antenna directivity. Stations can
>route signals around the interfering transmitters.

Unfortunately, because the Ricochet system is deployed widely, it can be
very hard to do this.

>   In the Laramie, WY test, the one WaveLAN station was pointing at one
>Ricochet transmitter, and the other at another. Or at least that is the
>way i read it.

This is incorrect. As stated in the paper, we intentionally pointed our
antennas east/west, while the WAP (Metricom hub) was to the south of one
end of the path and the nearest visible pole-top unit was to the north of
the other. Both were several blocks away.

--Brett Glass

11. RE: 2032] Panasonic 2.4Ghz spread spectrum telephone

From: "Lanier, Robert" <rlanier@harris.com>
Date: Tue, 8 Sep 1998 09:18:23 -0400
To: "'ss@tapr.org'" <ss@tapr.org>
Message-ID: <275399FB18C4D111871300805FBEB72F01215B2E@corpmx6.ess.harris.com>
Rendered body type: text/plain

Robb,

Where did you see this phone at? Target? Wal Mart? KMart? Sears?

Would like to know.

Tony   KE4ATO

> -----Original Message-----
> From: ss@tapr.org [SMTP:ss@tapr.org]
> Sent: Sunday, September 06, 1998 8:57 PM
> To: ss@tapr.org
> Subject: [SS:2032] Panasonic 2.4Ghz spread spectrum telephone
>
> Panasonic has just come out with a 2.4 ghz spread spectrum telephone. I
> was wondering if anyone has tried taking it apart to see if the insides
> could be used to modulate a gunn microwave transmitter?
>
> I'll let you know what I find inside
>
> Robb GreatHouse

12. Re: [SS:2039] RE: 2032] Panasonic 2.4Ghz spread spectrum telephone

From: Robb Greathouse <atlas@quiknet.com>
Date: Tue, 08 Sep 1998 19:54:26 -0700
To: ss@tapr.org
Message-ID: <35F5EDE2.57FFA339@quiknet.com>
Rendered body type: text/plain

In the Sacramento area it is for sale at Frye's. Probably any large electronics
store would carry it.

Lanier, Robert wrote:

> Robb,
>
> Where did you see this phone at? Target? Wal Mart? KMart? Sears?
>
> Would like to know.
>
> Tony   KE4ATO
>
>> -----Original Message-----
>> From: ss@tapr.org [SMTP:ss@tapr.org]
>> Sent: Sunday, September 06, 1998 8:57 PM
>> To: ss@tapr.org
>> Subject: [SS:2032] Panasonic 2.4Ghz spread spectrum telephone
>>
>> Panasonic has just come out with a 2.4 ghz spread spectrum telephone. I
>> was wondering if anyone has tried taking it apart to see if the insides
>> could be used to modulate a gunn microwave transmitter?
>>
>> I'll let you know what I find inside
>>
>> Robb GreatHouse

13. Re: [SS:2040] RE: 2032] Panasonic 2.4Ghz spread spectrum telephone

From: Eric Glover <compuman@eecs.umich.edu>
Date: Tue, 8 Sep 1998 23:59:16 -0400 (EDT)
To: ss@tapr.org
Message-ID: <Pine.GSO.4.02.9809082357570.5744-100000@vulture.eecs.umich.edu>
Rendered body type: text/plain

Check out:
http://www.panasonic.com/consumer_electronics/telephone/giga.htm

Aparently, it uses TWO separate bands, only from the base unit to the
phone is 2.4 Ghz, the phone to base is 900 Mhz...They *claim* twice the
range of std 900 Mhz DSS phones...

If someone gets this please let me know, I am very curious as to the
price, and quality.

Thanks,
Eric

- -
...an enormous body of information science literature is based on work
that *uses* relevance, without throughly understanding what it
means ... without an understanding of what relevance means *to*
users, it seems difficult to imagine how a system can retrieve relevant
information *for* users. -- Schamber, 1990
- -
                  Eric Glover -- compuman@eecs.umich.edu
             Grad student hoping to finish before the year 2000!

On Tue, 8 Sep 1998, Robb Greathouse wrote:

> In the Sacramento area it is for sale at Frye's. Probably any large electronics
> store would carry it.
>
> Lanier, Robert wrote:
>
> > Robb,
> >
> > Where did you see this phone at? Target? Wal Mart? KMart? Sears?
> >
> > Would like to know.
> >
> > Tony   KE4ATO
> >
> >   -----Original Message-----
> >   From: ss@tapr.org [SMTP:ss@tapr.org]
> >   Sent: Sunday, September 06, 1998 8:57 PM
> >   To: ss@tapr.org
> >   Subject: [SS:2032] Panasonic 2.4Ghz spread spectrum telephone
> >
> >   Panasonic has just come out with a 2.4 ghz spread spectrum telephone. I
> >   was wondering if anyone has tried taking it apart to see if the insides
> >   could be used to modulate a gunn microwave transmitter?
> >
> >   I'll let you know what I find inside
> >
> >   Robb GreatHouse
>
>

14. RE: 2039] RE: 2032] Panasonic 2.4Ghz spread spectrum telephone

From: "Harry Burford" <hburford@airmail.net>
Date: Wed, 9 Sep 1998 06:46:19 -0500
To: <ss@tapr.org>
Message-ID: <000b01bddbe7$763bc9c0$716f6f6f@harryport>
Rendered body type: text/plain

Circuit City here in TX had a spot for it advertised on the shelf last
weekend, but they didn't have any to show.

Hb   KAØTTY

-----Original Message-----
From: ss@tapr.org [mailto:ss@tapr.org] On Behalf Of Lanier, Robert
Sent: Tuesday, September 08, 1998 8:24 AM
To: ss@tapr.org
Subject: [SS:2039] RE: 2032] Panasonic 2.4Ghz spread spectrum telephone

Robb,

Where did you see this phone at? Target? Wal Mart? KMart? Sears?

Would like to know.

Tony   KE4ATO

        -----Original Message-----
        From: ss@tapr.org [SMTP:ss@tapr.org]
        Sent: Sunday, September 06, 1998 8:57 PM
        To: ss@tapr.org
        Subject: [SS:2032] Panasonic 2.4Ghz spread spectrum telephone

        Panasonic has just come out with a 2.4 ghz spread spectrum telephone. I
        was wondering if anyone has tried taking it apart to see if the insides
        could be used to modulate a gunn microwave transmitter?

        I'll let you know what I find inside

        Robb GreatHouse

15. Bell Labs scientists shatter limit on fixed wireless transmission

From: Dewayne Hendricks <dewayne@warpspeed.com>
Date: Wed, 9 Sep 1998 22:05:21 -0700
To: ss@tapr.org (TAPR SS Mailing List)
Message-ID: <v0402050ab21d0e769d3c@[192.168.1.7]>
Rendered body type: text/plain

Bell Labs scientists shatter limit on fixed wireless transmission

FOR RELEASE: WEDNESDAY SEPTEMBER 09, 1998 MURRAY HILL, N.J. - Lucent Technologies today announced scientists at Bell Labs, the company's research and development arm, have developed a breakthrough technology that may potentially boost the capacity of certain wireless links by 10 to 20 times. This innovation, known as BLAST, may allow so-called "fixed" wireless technology to rival the capabilities of today's wired networks, while also providing faster and more cost-effective deployment. One potential application would be for businesses, where wires no longer would be necessary to transmit data between desktop computers, notebook computers and hand-held devices. Another possible use would be providing phone service to remote and rural areas, where wireless networks would connect homes and businesses to copper-wired public telephone service providers. "Technologies that provide a 10-fold improvement in wireless capacity come along once a decade," said Bell Labs President Dan Stanzione. "This is a very significant scientific development with long-term potential impact on our wireless business." The BLAST technology is not well suited for mobile wireless applications, such as hand-held and car-based cellular phones, because multiple antennas - both transmitting and receiving -- are needed. In addition, tracking signal changes in mobile applications would increase the computational complexity. The inspiration for BLAST (Bell Labs Layered Space-Time) can be traced to a challenge from Rich Gitlin, chief technical officer and Data Networking Technology Vice President in Lucent's Data Networking Systems business unit. Gitlin asked the researchers to take a fresh look at a 50-year-old mathematical theory developed at Bell Labs, which is the theoretical foundation of today's high-speed communications systems. The end result was cramming roughly 10 to 20 times more information on the same frequency band by developing new signal processing techniques. "The breakthrough results prove the feasibility of a technology which leapfrogs what we assumed about the limitations of radio communications," said Jim Brewington, president of Lucent's Wireless Networks Group. "While there is still a great deal of applied research required before we apply this discovery, we are very excited about its potential implications for our future wireless systems." The BLAST technology essentially exploits a concept that other researchers believed was impossible. The prevailing view was that each wireless transmission needed to occupy a separate frequency, similar to the way in which FM radio stations within a geographical area are allocated separate frequencies. Otherwise, the interference is too overwhelming for quality communications. The BLAST researchers, however, theorized it is possible to have several transmissions occupying the same frequency band. Each transmission uses its own transmitting antenna. Then, on the receiving end, multiple antennas again are used, along with innovative signal processing, to separate the mutually interfering transmissions from each other. Thus, the capacity of a given frequency band increases proportionally to the number of antennas. The BLAST prototype, built to test this theory, uses an array of eight transmit and 12 receive antennas. During its first weeks of operation, it achieved unprecedented wireless capacities of at least 10 times the capacity of today's fixed wireless loop systems, which are used to provide phone service in rural and remote areas. "This new technology represents an opportunity for future wireless systems of extraordinary communications efficiency," said Bell Labs researcher Reinaldo Valenzuela, who headed the BLAST research team. "This experiment, which was designed to illustrate the basic principle, represents only a first step of using the new technology to achieve higher capacities." The advanced signal-processing techniques used in BLAST were first developed by researcher Gerard Foschini from a novel interpretation of the fundamental capacity formulas of Claude L. Shannon's Information Theory, first published in 1948. While Shannon's theory dealt with point-to-point communications, the theory used in BLAST relies on "volume-to -volume" communications, which effectively gives Information Theory a third, or spatial, dimension, besides frequency and time. This added dimension, said Foschini, is important because "when and where noise and interference turn out to be severe, each bit (of data) is well prepared to weather such impairments." Remarkably, the initial BLAST experiment designed by researchers Glenn Golden and Peter Wolniansky did not use the technology of error correction coding to correct signal errors, nor did the transmitter have prior knowledge of which signal components would propagate easily and which would be severely impaired. Also, BLAST research by Michael Gans includes determining the optimal placement and number of transmitting and receiving antennas. If, for instance, the distance between antennas on each end were further reduced, the number of potential applications, such as mobile communications, might increase. In addition, researchers are trying to boost capacity even further and exploring how to enhance BLAST for all wireless formats.

Technical background

Information about BLAST is available at

http://www.bell-labs.com/news/1998/september. More information about the BLAST research project is available at http://www.bell-labs.com/projects/blast . For technical information on the BLAST architecture, see Gerard J. Foschini, "Layered Space-Time Architecture for Wireless Communication in a Fading Environment when Using Multiple Antennas," Bell Labs Technical Journal, Volume 1, Number 2 Autumn 1996, pp 41-59 (or: http://www.lucent.com/ideas2/perspectives/bltj/autumn_96/paper04/main.html. For more information on Claude Shannon's Information Theory, see http://www.lucent.com/informationtheory . Lucent Technologies (LU) designs, builds, and delivers a wide range of public and private networks, communications systems and software, consumer and business telephone systems and microelectronics components. Bell Labs is the research and development arm of the company. For more information about Lucent Technologies, headquartered at Murray Hill, N.J., visit our web site at www.lucent.com. Technical Background BLAST is a wireless communications technique, which uses multi-element antennas at both transmitter and receiver to permit transmission rates far in excess of those possible using conventional techniques. In wireless systems, radio waves do not propagate simply from transmit antenna to receive antenna, but bounce and scatter wildly off objects in the environment. This scattering is known as "multipath", as it results in multiple copies ("images") of the transmitted signal arriving at the receiver via different scattered paths. In conventional wireless systems, multipath represents an impairment to accurate transmission, because the images arrive at the receiver at slightly different times and can thus interfere destructively, canceling each other out. For this reason, multipath is traditionally viewed as a serious impairment. Using the BLAST approach however, it is possible to exploit multipath -- that is, to use the scattering characteristics of the propagation environment to enhance, rather than degrade, transmission accuracy by treating the multiplicity of scattering paths as separate parallel subchannels. BLAST accomplishes this by splitting a single user's data stream into multiple substreams and using an array of transmitter antennas to simultaneously launch the parallel substreams. All the substreams are transmitted in the same frequency band, so spectrum is used very efficiently. Since the user's data is being sent in parallel over multiple antennas, the effective transmission rate is increased in roughly in proportion to the number of transmitter antennas used. At the receiver, an array of antennas is again used to pick up the multiple transmitted substreams and their scattered images. Each receiving antenna "sees" all of the transmitted substreams superimposed, not separately. However, if the multipath scattering is sufficient, then the multiple substreams are all scattered differently, since they originate from different transmit antennas that are located at slightly different points in space. Using sophisticated signal processing, these differences in scattering of the substreams allow the substreams to be identified and recovered. In effect, the unavoidable multipath in wireless communication offers a very useful spatial parallelism that is used to greatly improve bit-rates. Thus, when using the BLAST technique, the more multipath, the better, just the opposite of conventional systems. The BLAST signal processing algorithms used at the receiver are the heart of the technique. At the bank of receiving antennas, high-speed signal processors look at all the signals from all the receiver antennas simultaneously, first extracting the strongest substream from the morass, then proceeding with the remaining weaker signals, which are easier to recover once the stronger signals have been removed as a source of interference. Again, the ability to separate the substreams depends on the differences in the way the different substreams propagate through the environment. Under the widely used theoretical assumption of independent Rayleigh scattering, the theoretical capacity of the BLAST architecture grows roughly linearly with the number of antennas, even when the total transmitted power is held constant. In the real world of course, scattering will be less favorable than the independent Rayleigh distributed assumption, and it remains to be seen how much capacity is actually available in various propagation environments. Nevertheless, even in relatively poor scattering environments, BLAST should be able to provide significantly higher capacities than conventional architectures. A laboratory prototype has already demonstrated spectral efficiencies of 20 to 40 bits per second per Hertz of bandwidth, numbers that are simply unattainable using standard techniques.

For more information, reporters may contact: Steve Eisenberg Lucent Technologies 908-582-7474 (office) Email:seisenberg@lucent.com Dick Muldoon Lucent Technologies 908-582-5330 (office) Email:rpmuldoon@lucent.com
KEYWORDS: none

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16. Re: [SS:2043] Bell Labs scientists shatter limit on fixed wireless transmission

From: Adnan Basalamah <adnan@itb.ac.id>
Date: Thu, 10 Sep 1998 13:03:51 +0700 (JAVT)
To: ss@tapr.org
Message-ID: <Pine.BSF.4.02A.9809101256100.6160-100000@students.itb.ac.id>
Rendered body type: text/plain

I read at the "Applied microwave & wireless " magazine, may
1998 edition, a modulation methods known as VMSK , Very Minimum Shift
Keying. It seems that modulation scheme has similar capabilities with this
"blast". the bandwidth effieciency achieved by VMSK is 15 to 27
bits/sec/hz. measured C/N ratio for 10E-6 BER with bandwidth efficiency
16 bits/sec/hz was 5 to 6 dB

-adnan-

On Thu, 10 Sep 1998, Dewayne Hendricks wrote:

> Bell Labs scientists shatter limit on fixed wireless transmission
>
> =46OR RELEASE: WEDNESDAY SEPTEMBER 09, 1998 MURRAY HILL, N.J. - Lucent
> Technologies today announced scientists at Bell Labs, the company's
> research and development arm, have developed a breakthrough technology that

adnan-imuts@itb.ac.id
http://xxx.itb.ac.id/~adnan

17. Re: [SS:2043] Bell Labs scientists shatter limit on fixed wireless transmission

From: "William P.N. Smith" <wpns@compusmiths.com>
Date: Thu, 10 Sep 1998 10:55:37 -0400
To: ss@tapr.org
Message-ID: <35F7E869.87B358D8@compusmiths.com>
Rendered body type: text/plain

Dewayne Hendricks wrote:
> Bell Labs scientists shatter limit on fixed wireless transmission
[...]
> accuracy by treating the multiplicity of scattering paths as separate
> parallel subchannels. BLAST accomplishes this by splitting a single user's
> data stream into multiple substreams and using an array of transmitter
> antennas to simultaneously launch the parallel substreams. All the
> substreams are transmitted in the same frequency band, so spectrum is used
> very efficiently. Since the user's data is being sent in parallel over
> multiple antennas, the effective transmission rate is increased in roughly
> in proportion to the number of transmitter antennas used. At the receiver,
> an array of antennas is again used to pick up the multiple transmitted
> substreams and their scattered images. Each receiving antenna "sees" all of
> the transmitted substreams superimposed, not separately. However, if the
> multipath scattering is sufficient, then the multiple substreams are all
> scattered differently, since they originate from different transmit
> antennas that are located at slightly different points in space. Using
> sophisticated signal processing, these differences in scattering of the
> substreams allow the substreams to be identified and recovered. In effect,

Sounds like an interesting hack, let's see if it works in the real
world. I'd suspect that in an environment where the multipath varies
(IE, the real world) it may not work as well (or it may more heavily
task the "high speed DSP", as it'll have to pick out the multipath stuff
faster...

--
William Smith   wpns@compusmiths.com   N1JBJ@amsat.org
ComputerSmiths Consulting, Inc.   www.compusmiths.com

18. Re: [SS:2045] Re: Bell Labs scientists shatter limit on fixed wireless transmission

From: "Lee W. Fry" <lfry@mindspring.com>
Date: Thu, 10 Sep 1998 18:46:37 -0400
To: ss@tapr.org
Message-ID: <2.2.32.19980910224637.00af3cf8@mindspring.com>
Rendered body type: text/plain

At 10:11 AM 9/10/98 -0500, N1JBJ wrote:

>Sounds like an interesting hack, let's see if it works in the real
>world. I'd suspect that in an environment where the multipath varies
>(IE, the real world) it may not work as well (or it may more heavily
>task the "high speed DSP", as it'll have to pick out the multipath stuff

>faster...

Any more signal processing, and you won't need RF. The processor will
predict the result with no input.

Lee
AA0JP
lfry@mindspring.com

19. Re: [SS:2044] Re: Bell Labs scientists shatter limit on fixed wireless

From: Kent Farnsworth <akent@bga.com>
Date: Thu, 10 Sep 1998 20:07:14 -0500
To: ss@tapr.org
Message-ID: <199809110107.UAA27662@zoom.bga.com>
Rendered body type: text/plain

Yeah but:

VMSK is not what these guys are talking about. I also saw the VMSK article,
and thought it was cute. If I had time, I would play with VMSK, as it sounds
like a really nice modulation technique.

It would be relatively easy (not really, but to make it sound better, bear
with me), to take a known multipath area, say downtown Anywhere, and setup a
mutiple directional antenna transmitter, say some horizontally polarized,
and some vertically, and aim them at different buildings in the area. Then,
do the same on the receiver. Humm.... Not an easy task, but I can see where
they could design a receiver algorithm such that the reflections that are
the same data are indeed multipath, and the ones that are different by some
amount are real data on a multipath channel. The data encoding format would
be critical, I would think. This would require an enormous DSP sample
history, with enormous computing power, to do this in realtime. In a point
to point environment in a really crowded area, I could see how this could be
amazing in data throughput. The initial training time could be a problem, I
would think. It would perhaps be analgous, but almost infinitely more
difficult than say land line modem equilization.

In the real world, who knows. It sounds like it could work, albeit in a
non-mobile environment.

Kent - KC5WPW

At 02:12 AM 9/10/98 -0500, Adnan Basalamah wrote:
>
>I read at the "Applied microwave & wireless " magazine, may
>1998 edition, a modulation methods known as VMSK , Very Minimum Shift
>Keying. It seems that modulation scheme has similar capabilities with this
>"blast". the bandwidth effieciency achieved by VMSK is 15 to 27
>bits/sec/hz. measured C/N ratio for 10E-6 BER with bandwidth efficiency
>16 bits/sec/hz was 5 to 6 dB
>
>-adnan-
>
>
>
>On Thu, 10 Sep 1998, Dewayne Hendricks wrote:
>
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>>
>> =46OR RELEASE: WEDNESDAY SEPTEMBER 09, 1998 MURRAY HILL, N.J. - Lucent
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>> research and development arm, have developed a breakthrough technology that
>
>   adnan-imuts@itb.ac.id
>   http://xxx.itb.ac.id/~adnan
>
>
>
--- Kent Farnsworth (akent@bga.com)

20. Re: [SS:2038] Re:Study on Metricom effects on WaveLAN systems

From: bm@lynx.ve3jf.ampr.org
Date: Thu, 10 Sep 1998 22:50:13 -0400 (EDT)
To: ss@tapr.org
Message-ID: <199809110250.WAA10372@lynx.ve3jf.ampr.org>
Rendered body type: text/plain

Brett Glass <brett@lariat.org> wrote:
> At 10:55 AM 9/7/98 -0500, Donald V. Lemke wrote:
>
> >   I guess the thing here is that WaveLAN radios were designed for use
> >in indoor LAN systems.
>
> Not so! Lucent specifically recommends WaveLAN for outdoor applications
> at a range of 3-6 miles. See their literature!

True. I'm running a couple of 10 mile WaveLAN links with good success.
However, it's 2.4 GHz WaveLAN, where you have a choice of 6 different
center freqencies to help dodge interference, and you can muster up more
directivity than at 900 MHz with reasonably-sized antennas. You also
need a healthy dose of luck, and there's no guarantee that the guy next
door won't fire something up tomorrow that will put you out of commission.

The problem with WaveLAN (and virtually all of the other Part 15 direct
sequence systems) is that it is very vulnerable to narrowband interference.
With a spreading factor of only 11, it has minimal processing gain and
barely qualifies for the term "spread spectrum". This is not what the
military folks had in mind when they first developed the spread spectrum
concept. :-) But the market demands speeds approaching ethernet in
wireless LANs, so robustness is compromised in favor of speed.

Barry

--
  Barry McLarnon VE3JF/VA3TCP | bm@hydra.carleton.ca
  Ottawa Amateur Radio Club | bm@lynx.ve3jf.ampr.org
  Packet Working Group | http://hydra.carleton.ca

21. Re: [SS:2044] Re: Bell Labs scientists shatter limit on fixed wireless

From: bm@lynx.ve3jf.ampr.org
Date: Thu, 10 Sep 1998 23:19:38 -0400 (EDT)
To: ss@tapr.org
Message-ID: <199809110319.XAA12718@lynx.ve3jf.ampr.org>
Rendered body type: text/plain

Adnan Basalamah <adnan@itb.ac.id> wrote:
>
> I read at the "Applied microwave & wireless " magazine, may
> 1998 edition, a modulation methods known as VMSK , Very Minimum Shift
> Keying. It seems that modulation scheme has similar capabilities with this
> "blast". the bandwidth effieciency achieved by VMSK is 15 to 27
> bits/sec/hz. measured C/N ratio for 10E-6 BER with bandwidth efficiency
> 16 bits/sec/hz was 5 to 6 dB

I've seen similar articles about amazing breakthroughs in the past. The thing
is, you never see such articles in refereed technical journals. They are always
in those trade mags that mainly print material submitted by their advertisers -
application notes, thinly-disguised ads, etc. Then, strangely enough, you never
hear about the amazing breakthrough again. I remember seeing the article you
mention, and if I remember correctly, the author is associated with a company
which has been making exaggerated claims for a wireless Internet service which
is based on CDPD.

Given its source, I'd put more credence in the Lucent development, but it's bound
to have its own limitations. It sounds like a variation on the RAKE receiver idea,
but instead of resolving the multipath components and using them as diversity
branches to improve the error rate of a single bit stream, the components carry
independent bit streams. As someone else mentioned, the success of this technique
would be very dependent on the propagation environment, and it doesn't seem to
have any potential in mobile applications.

Life's full of tradeoffs, ain't it? ;-)

Barry

--
  Barry McLarnon VE3JF/VA3TCP | bm@hydra.carleton.ca
  Ottawa Amateur Radio Club | bm@lynx.ve3jf.ampr.org
  Packet Working Group | http://hydra.carleton.ca

22. Re: [SS:2045] Re: Bell Labs scientists shatter limit on fixed wireless transmission

From: Brett Glass <brett@lariat.org>
Date: Thu, 10 Sep 1998 22:55:44 -0600

To: ss@tapr.org, ss@tapr.org
Message-ID: <199809110500.XAA09277@lariat.lariat.org>
Rendered body type: text/plain

At 10:11 AM 9/10/98 -0500, William P.N. Smith wrote:

>Sounds like an interesting hack, let's see if it works in the real
>world.

It's does. It's called a "phased array." ;-)

--Brett

23. Re: [SS:2048] Re:Study on Metricom effects on WaveLAN systems

From: Brett Glass <brett@lariat.org>
Date: Thu, 10 Sep 1998 22:59:49 -0600
To: ss@tapr.org
Message-ID: <199809110500.XAA09280@lariat.lariat.org>
Rendered body type: text/plain

At 09:52 PM 9/10/98 -0500, bm@lynx.ve3jf.ampr.org wrote:

>The problem with WaveLAN (and virtually all of the other Part 15 direct
>sequence systems) is that it is very vulnerable to narrowband interference.
>With a spreading factor of only 11, it has minimal processing gain and
>barely qualifies for the term "spread spectrum". This is not what the
>military folks had in mind when they first developed the spread spectrum
>concept. :-) But the market demands speeds approaching ethernet in
>wireless LANs, so robustness is compromised in favor of speed.

The funny thing is that it's plenty good enough in most cases. It does
well with a single hopper close by, because it's got sufficient
diversity to handle the hole in the spectrum (I believe it also has
forward error correction built in). It's multiple coordinated hoppers
that drive it bonkers. Especially if they gang up by increasing their
power to kill it.

--Brett

24. Re: [SS:2051] SS digest 520

From: Matt Ettus <ettus@earthlink.net>
Date: Fri, 11 Sep 1998 00:58:11 -0700
To: ss@tapr.org
Message-ID: <35F8D813.95059928@earthlink.net>
Rendered body type: text/plain

measured C/N ratio for 10E-6 BER with bandwidth efficiency
16 bits/sec/hz was 5 to 6 dB

Is it me, or does that not make any sense. C/N is meaningless unless we
know the noise bandwidth.

Assuming a reasonable noise BW of bitrate/16 then this violates
Shannon's theorem.

I'd doubt these claims unless they cheat in some way.

Matt
N2MJI

25. Re: [SS:2051] Re:Study on Metricom effects on WaveLAN systems

From: bm@lynx.ve3jf.ampr.org
Date: Fri, 11 Sep 1998 10:04:16 -0400 (EDT)
To: ss@tapr.org
Message-ID: <199809111404.KAA32519@lynx.ve3jf.ampr.org>
Rendered body type: text/plain

Brett Glass <brett@lariat.org> wrote:
> At 09:52 PM 9/10/98 -0500, bm@lynx.ve3jf.ampr.org wrote:
>
> >The problem with WaveLAN (and virtually all of the other Part 15 direct
> >sequence systems) is that it is very vulnerable to narrowband interference.
> >With a spreading factor of only 11, it has minimal processing gain and
> >barely qualifies for the term "spread spectrum". This is not what the
> >military folks had in mind when they first developed the spread spectrum
> >concept. :-) But the market demands speeds approaching ethernet in
> >wireless LANs, so robustness is compromised in favor of speed.
>

> The funny thing is that it's plenty good enough in most cases. It does
> well with a single hopper close by, because it's got sufficient
> diversity to handle the hole in the spectrum (I believe it also has
> forward error correction built in). It's multiple coordinated hoppers
> that drive it bonkers. Especially if they gang up by increasing their
> power to kill it.

I'm not sure what you mean by a "hole in the spectrum". Other than the limited protection provided by its minimal processing gain, WaveLAN has no tolerance for a single narrowband interfering signal (i.e., nothing along the lines of an adaptive notch filter or something of that ilk). But keep in mind that WaveLAN doesn't use the full ISM band - it uses about 42% at 915 MHz and 13% at 2.4 GHz - whereas the hopper typically will use the full band. So a single hopper will not be in-band to your WaveLAN signal the majority of the time, and when you factor in the duty cycle of the hopper, it leaves quite a bit of time for you to slip those WaveLAN packets through unmolested. But when you add more hoppers, you rapidly reach the point where there is almost always in-band interference, and your throughput goes in the toilet.

I don't think WaveLAN has any FEC... and if you're using directional antennas, you won't have the antenna diversity feature that's built into the indoor printed circuit antennas either. Those features probably wouldn't buy you much in a strong interference environment anyway.

I think the bottom line is that it's going to become more and more difficult to build MANs based on Part 15 devices, especially if you want high speed. That's the downside of using "free" spectrum. Hams aren't in much better shape, since we don't have any exclusive access to suitable spectrum. Of course, we can sometimes use brute force (power) to overcome interference, but this is expensive and leads to conflicts with other users of the bands.

Barry

--
Barry McLarnon VE3JF/VA3TCP | bm@hydra.carleton.ca
Ottawa Amateur Radio Club | bm@lynx.ve3jf.ampr.org
Packet Working Group | http://hydra.carleton.ca

26. Re: [SS:2053] Re:Study on Metricom effects on WaveLAN systems

From: Brett Glass <brett@lariat.org>
Date: Fri, 11 Sep 1998 09:16:11 -0600
To: ss@tapr.org, ss@tapr.org
Message-ID: <199809111516.JAA12819@lariat.lariat.org>
Rendered body type: text/plain

At 09:09 AM 9/11/98 -0500, bm@lynx.ve3jf.ampr.org wrote:

>I'm not sure what you mean by a "hole in the spectrum".

By "hole in the spectrum," I mean a small area of the spectrum on which it cannot communicate. (If there's a hopper present, that area moves as it hops.)

>But keep in mind that WaveLAN doesn't use the full ISM band - it uses
>about 42% at 915 MHz and 13% at 2.4 GHz - whereas the hopper typically
>will use the full band. So a single hopper will not be in-band to your
>WaveLAN signal the majority of the time, and when you factor in the duty
>cycle of the hopper, it leaves quite a bit of time for you to slip those
>WaveLAN packets through unmolested. But when you add more hoppers, you
>rapidly reach the point where there is almost always in-band interference,
>and your throughput goes in the toilet.

This is a plausible explanation. Of concern, then, is the fact that Metricom has patents on the coordination of hoppers so that they do not interfere with one another but do monopolize the band.

The FCC recently passed a rule prohibiting real-time coordination, but the rule doesn't prevent setting up coordination during the design and deployment of the network. It's a huge loophole large enough to drive a whole network through.

>I think the bottom line is that it's going to become more and more
>difficult to build MANs based on Part 15 devices, especially if you
>want high speed. That's the downside of using "free" spectrum.

Exactly. Metricom should really be using the licensed bandwidth

they discussed in their corporate report at

http://www.metricom.com/news/news970729.html

--Brett

27. Re: [SS:2053] Re:Study on Metricom effects on WaveLAN systems

From: Dewayne Hendricks <dewayne@warpspeed.com>
Date: Fri, 11 Sep 1998 08:38:05 -0700
To: ss@tapr.org
Message-ID: <v0402050fb21ef32b9a68@[192.168.1.7]>
Rendered body type: text/plain

At 9:09 -0500 9/11/98, bm@lynx.ve3jf.ampr.org wrote:
>I think the bottom line is that it's going to become more and more
>difficult to build MANs based on Part 15 devices, especially if you
>want high speed. That's the downside of using "free" spectrum. Hams
>aren't in much better shape, since we don't have any exclusive access
>to suitable spectrum. Of course, we can sometimes use brute force (power)
>to overcome interference, but this is expensive and leads to conflicts
>with other users of the bands.

o   I agree with you that it will be more and more difficult over time
to deploy and operate MAN's with Part 15 devices. Certainly with the
current crop of products that are available.

o   Hams do have some exclusive spectrum in the 2 GHz range in the US
that gets forgotten:

        - 2300-2305 MHz, we are primary there since early '97.
        - 2390-2400 MHz, we are primary there since about the same time.
                Our actual allocation there is 2390-2450 MHz, but we drop to
                secondary status from 2400-2450 MHz.

-- Dewayne
--
~~~~~~
Dewayne Hendricks, WA8DZP ! Internet: dewayne@warpspeed.com
Warp Speed Imagineering   ! Packet Radio: WA8DZP @ K3MC.#NOCAL.CA.USA.NOAM
43730 Vista Del Mar   ! WWW: <http://www.warpspeed.com/>
Fremont, CA 94539-3204   !
Fax: (510) 770-9854   !
~~~~~~

28. Source for 2.4 Gig WaveLan Gear?

From: "Bret Berger" <bret@infowest.com>
Date: Fri, 11 Sep 1998 11:34:12 -0600
To: <ss@tapr.org>
Message-ID: <01bdddaa$641f65c0$0201a8c0@henry>
Rendered body type: text/plain

Can anyone suggest a supplier with good prices on 2.4 Gig WaveLan gear?

thanks in advance,
bret

Bret Berger
bret@infowest.com   www.infowest.com/b/bret
(435) 673-3763   (435) 652-8417 FAX
StoneFly Technology
225 North Bluff Street, Suite 16
St. George, UT 84770-4552

29. Observations Supporting Barry's (VE3JF) Comments

From: Dick Bingham <dickrb@lsid.hp.com>
Date: Fri, 11 Sep 1998 11:14:57 -0700
To: ss@tapr.org
Message-ID: <35F968A1.25AF03F2@lsid.hp.com>
Rendered body type: text/plain

[Empty message body]
[Attachment: reply2dsss-ve3.txt; text/plain; 4,693 bytes]

30. [SS:2053] Re:Study on Metricom effects on WaveLAN systems

From: "Donald V. Lemke" <wb9mjn%wb9mjn.ampr.org@uugate.ampr.utah.edu>
Date: Fri, 11 Sep 1998 18:46:11 -0500
To: ss@tapr.org
Message-ID: <35F9B643.743@uugate.aim.utah.edu>

Rendered body type: text/plain

Hi Dewayne, Barry etal

Barry, I think your thinking too narrowly. Antenna Directivity is analogous to process gain. They are the same thing, as far as the signal at the output is concerned. A -13 dB rejection of an interfering signal by antenna pattern, and a -11 by DSSS Gp gives a Gps (system Gp) of 23 dB. Additionally, 20 dB increase in desired signal by the transmitting antenna pattern makes up for the difference in signal bandwidths.

Its not practicle to put antenna directivity to good work in an urban enviorment on 900 MHz. One has to go up in frequency. The beamwidths have to be too narrow in the metro enviorment for reasonably sized 900 MHz antennas.

--

73, Don.

AMPRNet : wb9mjn@wb9mjn.ampr.org[44.72.98.19]
Internet: wb9mjn%wb9mjn.ampr.org@uugate.aim.utah.edu
Website: http://www.qth.com/antpanel

31. Re:[SS:2043] Bell Labs scientists shatter limit on fixed wireless transmission

From: "Donald V. Lemke" <wb9mjn%wb9mjn.ampr.org@uugate.ampr.utah.edu>
Date: Fri, 11 Sep 1998 19:01:01 -0500
To: ss@tapr.org
Message-ID: <35F9B9BD.6D13@uugate.aim.utah.edu>
Rendered body type: text/plain

Hi Dewayne,

HO-HUM...this is the DDMA-WAN idea applied to the commercialy viable point to point radios. Rather than using the other radio enviorment resource to support more stations, its uses the capacity between two stations.

Old Hat , conceptually, one would have thought they would have been more inovative, for Bell Labs. Like how to seperate 3 or 4 stations from the same direction and different ranges with precisely timed DSSS. Maybe the anouncement is really about something like this, as they mention the volume to volume concept in the announcment. But, getting back to antenna side of things, and multipath, apparently not!

The antennas neccassary to do this in theory, but probably not quite there in practice yet, which is where Bell probabaly has had some real inovative success, have been around for at least 2 decades. They are not phase arrays. Time-Delay arrays would be a more precise name.

Now whether u do this at RF or in the IF with signal processors really is just an implimentation engineering problem.

--

73, Don.

AMPRNet : wb9mjn@wb9mjn.ampr.org[44.72.98.19]
Internet: wb9mjn%wb9mjn.ampr.org@uugate.aim.utah.edu
Website: http://www.qth.com/antpanel

32. Re: [SS:2059] Re:Bell Labs scientists shatter limit on fixed wireless transmission

From: Brett Glass <brett@lariat.org>
Date: Fri, 11 Sep 1998 20:01:44 -0600
To: ss@tapr.org
Message-ID: <199809120202.UAA03648@lariat.lariat.org>
Rendered body type: text/plain

At 07:06 PM 9/11/98 -0500, Donald V. Lemke wrote:

> The antennas neccassary to do this in theory, but probably not quite
>there in practice yet, which is where Bell probabaly has had some real
>inovative success, have been around for at least 2 decades. They are not

>phase arrays. Time-Delay arrays would be a more precise name.

Well, phase and time are essentially the same thing. Time delays
create the differences in phase that allow the antennas to pick out a
particular sender and reject others.

You can pick out a particular sender (or at least make that sender's
signal stand out) by telling your DSP, "Emphasize that component of the
signal which arrives at this antenna this much out of phase relative
to the way it arrives at the other antenna."

Of course, that's a loose, non-mathematical way of thinking about it,
but it's actually fairly easy to translate into something that can
be done by a simple DSP. I hard-wired something like it in college
to pick out audio sources from a specific part of a room given a
stereo signal as input. It used hybrid "bucket brigade" devices.

>   Now whether u do this at RF or in the IF with signal processors
>really is just an implimentation engineering problem.

There are lots of ways to do it with fairly primitive circuitry.
This is the fun part of RF circuit design.

--Brett

33. Re: [SS:2060] Re:Bell Labs scientists shatter limit on fixed

From: Jeff Millar <jeff@wa1hco.mv.com>
Date: Fri, 11 Sep 1998 23:54:15 -0400
To: ss@tapr.org
Message-ID: <199809120349.XAA27609@mercury.mv.net>
Rendered body type: text/plain

At 09:06 PM 9/11/98 -0500, Brett wrote:
>Well, phase and time are essentially the same thing. Time delays
>create the differences in phase that allow the antennas to pick out a
>particular sender and reject others.

A beamformer can use phase shifters or delay lines as you point out.
However, they differ in that a phase shifter has constant phase over
frequency and a delay line has constant delay over frequency
(approximately). So, designers prefer to use delay elements when the
antenna must form a beam over a range of frequencies.

jeff

34. SS vs narrowband users on HF

From: "Hare, Ed, W1RFI" <ehare@arrl.org>
Date: Sat, 12 Sep 1998 12:04:07 -0400
To: ss@tapr.org
Message-ID: <E12EC3E9FA06D211817D00805FC743CC08A86A@MAIL_SERV>
Rendered body type: text/plain

Colleagues,

I have been receiving this reflector for a while, to help me learn more
about the fascinating subject of SS. I was recently involved in a
discussion about SS on rec.radio.amateur.policy. In the course of that
discussion, I did some analysis of the interference potential of DSSS on
HF to narrowband users. I used a few simplifications, such as assuming
that the power density of the spread signal would be uniform, but I
wanted to share this with my colleagues on this forum and get feedback
and "peer review."

Thanks,

73, Ed Hare, W1RFI
ARRL Lab
EMC/RFI - out of his element with SS. :-)

Carl R. Stevenson wrote:

> Here I disagree strongly ... I don't believe that any such "inherent
> incompatibility" exists ... on the contrary, I'm convinced that SS
> systems could be overlaid on top of the existing NB users with little
> or no adverse effects.

Let me explain why I think that there would be incompatibility between
narrowband and DSSS users.

Although I readily accept that under ideal conditions, transcontinental HF SS QSOs can take place with powers in the tens of milliwatts, I will also add that under similar, ideal conditions, I have personally done the same with CW, using modest antennas (there are currently 30 states on my 10 milliwatt worked-all-states map). This does not mean that either mode can always be done by those power levels -- in some cases, 1500 watts is not quite enough.

However, I do not think that you would offer that SS stations be limited in power any more than any other amateur station and that, more often than not, more "normal" amateur powers would be required. As a minimum, I would expect that, if SS becomes "mainstream," average hams would obey the "minimum necessary power" rule on SS about as much as they do on narrowband -- not!

First, lets look at a few situations.

First, I have measured typical sensitivities of amateur stations, with local man made noise, as ranging from -125 dBm down to -135 dBm. Let's take -130 dBm as a typical number. (This is the noise floor of the station when
connected to its receive antenna.)

Now, let's put a 100 milliwatt (20 dBm) DSSS station, speading over 100 kHz on 21 MHz. This will give us 0 dBm/kHz transmitted power. Now, let's conservatively assume that this station is using an isotropic radiator and is located 10 km away. Using the formula for path loss (assuming isotropic antennas on each end):

path loss (dB) = 32.45 + 20log(km) + 20log(FreqMHz),

I calculate the free-space path loss would be 78.9 dB.

Zpply this to the 0 dBm transmitter power and this results in a receive power in 1 kHz of -78.9 dBm. Into 50 ohms, a 50 microvolt signal, S9, is -73 dBm, and assuming 6 dB/S unit, this is an S8 noise level, from a single 100-milliwatt SS station located in a good location, with a tall antenna, 10 kM away.

Now, even if we give away 20 dB for attenuation by trees and buildings that may or may not be in the way, we have a signal -98.9 dBm. That single SS station raising the noise floor across an entire town by 40 dB *across most of the 15 M CW/digital band -- IMHO, this is clearly harmful internferenc and the results are at odds with your conclusion.

It can, of course, get much worse. If one is a km away, the noise is increased to a total of 60 dB above the ambient noise. If you then raise the power to 1 kW, the noise is increased to 100 dB above the noise floor that would apply to that second station. Add 10 dBi antenna gain on each end, and it goes to 120 dB! Now, Zack Lau lives about 1 kM from W1AW. Zack can easily work the lower part of a band with W1AW doing its thing farther up the band, with perhaps a few dB of degradation, at best. If W1AW were running 1 kW DSSS, he probably couldn't even hear a single station. IMHO, a difference in interference potential from DSSS signals and narrowband signals of almost 100 dB is "incompatible" by any stretch of the word.

Here in Newington, there are probably at least 10 active hams within 10 kM of W1AW -- in major cities, the numbers could be much higher. How many hams would be effectively put off the air by how many DSSS stations before you would consider it incompatible? How many hams would have their noise floors increased by 6 S units before you would consider it incompatible?

Okay, it gets even worse. I will grant that only a relatively few hams would be affected by that single station within 10 kM. But, of course, that single station was a 100 milliwatt station. Unless you would stipulate that SS is only good under ideal conditions, I think we can both agree that most SS operation would take place under higher power. In a busy band, filled with SS signals, we can certainly expect that at least one of them would be running higher power to communicate over a marginal path -- let's give him 100 watts (+50 dBm) and see what happens.

That 100 watts is again spread over 100 kHz. This one is easy -- 1 watt per kHz. That would mean that every single other user in the band would be hearing a 1 watt QRP station everywhere he or she tuned. Well, QRP is easy to QRM, I guess, but I have heard a lot of loud 1 watt stations. Let's see how loud. The free-space formula won't help here,

so I relied on ICEPAK, a Windows version of IONCAP. On 21 MHz, at 1900 Z, I put a 1-watt station at Hartford CT, using an isotropic radiator, and asked ICEPAK to predict the average signal level expected to be received by a receiver connected to an isotropic antenna across the US. Over about 20% of the country, the receive signal level was about -105 dBm -- an increase of about 20 dB from the -125 dBm measured at a typical HF station. IMHO, a 20 dB increase in noise floor for 1/5 of the country from a single SS user is going to be "harmful interference" for at least some of those users. Admittedly, those who operate with signals that are tens and tens of dB louder than they need to be will not be affected, but my QRP work will be a thing of the past, many DX contacts will be harmed and many users will have to put up with orders of magnitude more noise than they otherwise would have -- across an entire band.

That 20 dB, BTW, is best case, not worst case. We started with isotropic radiators. Add real antennas, say 3-element Yagis, with 12.5 dBi gain (over ground) on each end, and end up wiht 45 dB increase in noise, to about S8. Up the SS station power to 1 kW, and it goes over S9. From a single station, on the entire CW band on 15 meters.

This says nothing about the near/far problem that will cream DSSS users who try to share the band with each other. As I tune across HF, I hear differences in signal levels between narrowband users of at least 100 dB between the weak ones and the ones who are pounding in (and some of them may have excellent propagation to me and poor propagation to the station being worked). In DSSS, you can copy other DSSS stations that are <process gain> below the total power received from the strongest DSSS station in your passband.

These are not even worst case assumptions; I have selected some conditions I both consider to be typical and that I believe would cause problems. Are the conditions I used unlikely? I don't think so. If there are flaws in my assumptions, please supply me with corrections -- I am willing to have my mind changed. And, keep in mind that, even with the results I have seen, I do not offer that SS, even DSSS, should not be permitted on HF. I do offer that the effects I have cited need to be considered as we develop rules changes for SS and narrowband users that will help move Amateur Radio forward. I have noted that most SS proponents offer that their should be no restrictions on SS at all. Based on the results I have seen in my brief, and admittedly incomplete, analysis, I do not agree with that position.

73, Ed, W1RFI
ARRL Lab

35. Re: [SS:2061] Re:Bell Labs scientists shatter limit on fixed

From: Jacob W Janovetz <janovetz@ews.uiuc.edu>
Date: Sat, 12 Sep 1998 14:03:48 -0500 (CDT)
To: ss@tapr.org
Message-ID: <199809121903.OAA18444@eesn16.ews.uiuc.edu>
Rendered body type: text/plain

>
> At 09:06 PM 9/11/98 -0500, Brett wrote:
> >Well, phase and time are essentially the same thing. Time delays
> >create the differences in phase that allow the antennas to pick out a
> >particular sender and reject others.
>
> A beamformer can use phase shifters or delay lines as you point out.
> However, they differ in that a phase shifter has constant phase over
> frequency and a delay line has constant delay over frequency
> (approximately). So, designers prefer to use delay elements when the
> antenna must form a beam over a range of frequencies.

Don't you mean they prefer phase shifters? A constant delay element would produce varying phase over frequency and therefore move the beam over frequency. Am I wrong?

    Cheers,
    Jake

--
   janovetz@uiuc.edu | Once you have flown, you will walk the earth with
 University of Illinois | your eyes turned skyward, for there you have been,
                        | there you long to return.   -- da Vinci
        PP-ASEL | http://www.ews.uiuc.edu/~janovetz/index.html

36. Re: [SS:2062] SS vs narrowband users on HF

From: "Steve Sampson" <ssampson@usa-site.net>
Date: Sat, 12 Sep 1998 17:28:31 -0500
To: <ss@tapr.org>
Message-ID: <000401bdde9c$ac2963a0$87228cd1@dodge.usa-site.net>
Rendered body type: text/plain

Ed,

You offer an excellent argument, and based on the technical merits,
I believe you have outlined the problem very well.

What I noticed right away, was your defining SS as a DS system
only. Your second paragraph needs to include why FH is
harmful as well.

My one gripe about US law, is that it gets too technical and
specific. I think that the ARS law should be much less
specific then it already is. I find the Part 97 law to be
over designed, and restricts experimentation without
first getting a Temporary permit. Just give me the
treaty law, the band limits, and let the fraternity/sorority
determine how the hobby should progress.

I wasn't around when SSB took over the AM bands, or
when CW took over from spark gaps, but maybe we
can use the same method in SS.

I for one, don't think SS will ever succeed until it is
given a band to operate in. The ARRL and other
digital groups need to decide on a band segment to
experiment with HF SS. Only then can we deploy
it across the board (say 10 years down the road).
The 440 allocation was a good start, but it has zero
worth in experimenting with SS on HF. We should
do the same thing we did for SS on 440, but remove
all the technical restrictions that cripple any endeavor.
What is more important, a "net" that's been on
frequency since 1967, or a growing hobby?

I don't think it has to be that large. If we assume
that the first SS units will be for voice and data,
then how about a band where 5 voice or 5
data channels can reside?

Using 3 kHz per hopping channel, that would be
less than a 20 kHz segment to experiment in.

The argument that says "We were here first, and
you will interfere with me" is a good one, but how
are we to ever experiment or grow? I can give you
24 reasons why SS is bad, but I can also give you
24 reasons why Linear Amplifiers are bad, or
AFSK is bad, etc. Your technical treatise on the
merits of SS is all very nice, but it is based on the
principle that CW and SSB will continue to be
prime modes. As the English teachers always do,
your treatise should also cover the opposite
perspective to be complete. How would CW and
other modes affect the SS noise floor, or its
operation. It may be a lose-lose, win-lose, or
lose-win? Which is it :-)

Best Regards,

Steve, N5OWK

-----Original Message-----
From: Hare, Ed, W1RFI <ehare@arrl.org>
To: ss@tapr.org <ss@tapr.org>
Date: Saturday, September 12, 1998 1:45 PM
Subject: [SS:2062] SS vs narrowband users on HF

>Colleagues,
>
>I have been receiving this reflector for a while, to help me learn more
>about the fascinating subject of SS. I was recently involved in a

>discussion about SS on rec.radio.amateur.policy. In the course of that
>discussion, I did some analysis of the interference potential of DSSS on
>HF to narrowband users. I used a few simplifications, such as assuming
>that the power density of the spread signal would be uniform, but I
>wanted to share this with my colleagues on this forum and get feedback
>and "peer review."

37. reply to Ed Hare, W1RFI, re 15M DSSS examples

From: "Robert A. Buaas" <buaas@wireless.net>
Date: Sat, 12 Sep 1998 13:49:11 -0700 (PDT)
To: ss@tapr.org
Message-ID: <199809122049.NAA08374@uv.wireless.net>
Rendered body type: text/plain

Hi Ed--

As a member of the "proponent" side of this discussion, I'd like to
offer some constructive criticism. It would seem that the examples
you've chosen are designed to inflame the casual, inexperienced reader,
rather than to inform. It seems to me that responsible members of the
ARRL Labs might want to conduct realistic experiments and take actual
data, rather than conjecture about the consequences.

Since when is it (a) permitted by the Rules, and/or (b) dictated by
Good Amateur Practice to intentionally interfere, perhaps by
needlessly running the "legal limit?" Yes, it happens all the time;
but should it be encouraged? Those of us that advocate unlimited SS
also feel that far better observance of ALL the Rules are needed,
particularly the seldom-observed Rule about using minimum power.

In choosing your examples, you said nothing about WHY you selected
DSSS, 100 KHz spreading bandwidth, and the power levels. You didn't
say what you were trying to accomplish. Inappropriate design and
operating choices lead to interference generation in all radio modes,
not just SS. Certainly, each choice you made exemplified the case
for causing wideband interference. To me, that is not an indictment
of SS, nor a valid argument for preventing its authorization. To
cite a more widely understood example, an equivalent choice would
be to attach a nonlinear power amplifier to an SSB exciter and radiate
the resulting signal. The difference in the two cases is that almost
everyone understands the consequences of the latter, while as
a result of so little understanding and experience with SS, almost
no one recognizes the inadvisibility of the former.

As I've said many times in my lectures on the subject, SS is a
significantly complicated digital system. Unfortunately, the
level of that complexity exceeds the level of expertise and/or
enthusiasm of most Amateurs. Those of us who have built real
systems know that it can easily take a year or more to build one.
One criteria that I apply to the systems I've built is that I
expect to get performance that I couldn't otherwise get from
a conventional system, as payback for the amount of work involved.
For example, at HF, an attractive project is an SS system that
combines the process gain of a hybrid of Frequency Hop (FHSS) and
"narrow spread" Direct Sequence (DSSS) using spreading codes
that yields both Forward Error Correction (FEC) and natural
coherence for very low data rates (CW/Morse equivalent) at very
low transmitted power levels. A less than optimal system that
moves in this direction could be realized by using a PACTOR
TNC with a synthesized transceiver referenced to a very
high quality timebase, synchronized using FHSS very-slow hop
rate of 1-hop per transmission, and hopping over the entire
width of the band in use. This makes the additional requirement
for a correspondingly wideband antenna system. Such a system
could then be used to experimentally determine the relationship
between transmitted power level and BER (bit error rate) of
received data. The next (more complicated) iteration, prototyped
using the DSP on a soundcard in a PC, would add modulation and
demodulation coherence and also reduce the system bitrate to that
corresponding to Morse CW (about 5 baud, from the 100/200 baud
used in PACTOR). One would expect to achieve a truly QRP system,
virturally jam-free. Combining the DSP and CPU into single,
low-power chips produces a system suitable for emergency/portable
operation from minimal power sources. Doing all this
requires a huge amount of effort and dedication from a team
of uniquely talented implementers, which explains why it hasn't
yet been done.

What happened to Amateur Radio's obligation to contribute to

advancing the state of the art, which is one of the justifications
for giving us the spectrum we occupy? What about attracting
young people into Ham Radio and into the art of Radio Engineering?
Amateur Radio as we know it is dying, and little we're doing
is changing that direction. The Internet is a powerful draw
for today's students and budding engineers, providing much more
simply than we, a means to communicate globally with much less effort.

SS (in all its many and varied forms), at least, has the intellectual
and practical challenge that might interest newcomers otherwise lost.

best regards/bob K6KGS
(buaas@wireless.net)

38. Re: [SS:2047] Re: Bell Labs scientists shatter limit on fixed

From: "William P.N. Smith" <wpns@compusmiths.com>
Date: Sun, 13 Sep 1998 11:09:29 -0400
To: ss@tapr.org
Message-ID: <35FBE029.761457C7@compusmiths.com>
Rendered body type: text/plain

Kent Farnsworth wrote:

> It would be relatively easy (not really, but to make it sound better, bear
> with me), to take a known multipath area, say downtown Anywhere, and setup a
[...]
> be critical, I would think. This would require an enormous DSP sample
> history, with enormous computing power, to do this in realtime. In a point

But don't forget that the multipath environment is constantly changing,
as trucks, cars, and planes move around, buildings sway in the wind, and
new buildings are built.

--
William Smith   wpns@compusmiths.com   N1JBJ@amsat.org
ComputerSmiths Consulting, Inc.   www.compusmiths.com

39. Re:[SS:2063] Re:Bell Labs scientists shatter limit on fixed

From: "Donald V. Lemke" <wb9mjn%wb9mjn.ampr.org@uugate.ampr.utah.edu>
Date: Sun, 13 Sep 1998 08:07:21 -0500
To: ss@tapr.org
Message-ID: <35FBC389.318C@uugate.aim.utah.edu>
Rendered body type: text/plain

Hi Jake,

      I didn t write the comment u replied too, but i wrote the comment
he was replying to.

      The problem with phase shifters is that the signal arriving at any
element , versus another element in an array from a particular
direction is not constant in phase over frequency. If the angle is 30
degrees from the boresite to the right, then the elements to the left
recieve the wave thru an additional distance of sin(30) times the
distance between the element, and the furthest right elements. This is a
fixed distance difference. Distances are constant in delay, not phase,
versus frequency. If between two elements at a particular frequency, the
difference needs to be 100 degrees, then at another frequency that
distance represents a different phase.

      For large array antennas, phase shifting is the only economical
way to go. Additionally, they have the the capability of being easily
computer controlled.

      For smaller array antennas with broad bandwidths, time delay
phasing is practical. Additionally, its possible to have an array
antenna with a port for every beam direction, and these ports can be
used simultaneously.
--

73, Don.

AMPRNet : wb9mjn@wb9mjn.ampr.org[44.72.98.19]
Internet: wb9mjn%wb9mjn.ampr.org@uugate.aim.utah.edu
Website: http://www.qth.com/antpanel

40. Re:[SS:2062] SS vs narrowband users on HF

From: "Donald V. Lemke" <wb9mjn%wb9mjn.ampr.org@uugate.ampr.utah.edu>
Date: Sun, 13 Sep 1998 08:32:08 -0500
To: ss@tapr.org
Message-ID: <35FBC958.1838@uugate.aim.utah.edu>
Rendered body type: text/plain

Hi Ed,

Well, one can always pick a question somebody else does not want to answer, hi. Kinda like "Have you ever driven over the speed limit?" or "Have you ever had consentual sex in the oval office?" , ;-).

Lets ask this question instead: Its 6 pm, Its 40 meters, and you are east of the Missippi River in North America. What mode would you want to use for voice? SSB, or DSSS spread over 7.100 to 7.300?

--

73, Don.

AMPRNet : wb9mjn@wb9mjn.ampr.org[44.72.98.19]
Internet: wb9mjn%wb9mjn.ampr.org@uugate.aim.utah.edu
Website: http://www.qth.com/antpanel

41. Re: Re: SS on HF

From: "Robert A. Buaas" <buaas@wireless.net>
Date: Mon, 14 Sep 1998 14:36:52 -0700 (PDT)
To: ss@tapr.org
Cc: buaas@uv.wireless.net, ehare@arrl.org
Message-ID: <199809142136.OAA13025@uv.wireless.net>
Rendered body type: text/plain

Ed--

For the record, my interest in radio goes back to before I started school. I was fascinated by radio for radio's sake. My interest was in experimenting, not communicating. One of the wonderful things about Ham Radio is that it can be a vehicle for many different interests/goals. I built my first regen at age 6, got my novice at age 9 (or 10, I haven't seen my original license for many years, and the records at the FCC are long gone, or so I'm told), my extra at 17 when I could copy the 20 WPM code. I built my first SSB transmitter at age 13, though I must confess I had little idea what made it work, work it did. I had the benefit of some of the world's expert radio engineers for Elmers, staff members at the Navy Electronics Lab in San Diego, and a school teacher who was himself an avid DX fan (and who helped me understand and then clean up the key clicks I was generating).

It's also obvious that we are completely opposite in some of our views and philosphies about both the technology and about the future of Ham Radio. With regard to the practice of SS, I claim the preemption of experience, and with that, the assertion that the parameter choices used in the DSSS HF assessment were absurdly poor ones.

I took the liberty of showing your posting to several SS-unknowledgable hams, and asked their conclusions. They agreed with your conclusions. Then I explained the errors in the assumptions, and they left with different conclusions, and with a better understanding of the art. This is my point about education, and the lack thereof, about SS.

That said, I propose that we could constructively change our conversation to address the system that I hypothesized: 15M PACTOR FHSS using the entire 15M band. I choose PACTOR for it's 1.5-sec xmit time, 0.5-sec ACK time (yes, I know the time for the ACK is shorter, but lets use this to simplify the arithmetic that coming), and that the propogation vs. performance characteristics are pretty well known to most readers. 15M, because you chose it, becuase it's a nice long-haul band, making a wideband antenna is not hard, and low power is entirely usable (1KW seldom gets through when 10-100W won't almost as well).

If it isn't obvious yet, the purpose of this exercise is: (a) education, and (b) hopefully, to generate some enthusiasm for trying this...

Lets say that we divide the 15M band into 150 3KHz-wide "channels".
The PACTOR signal is only 300 Hz wide, but if we're using the entire
band, our signal hitting anywhere up against an SSB signal means that
in interference terms, we have to consider the wider signal. If we hop
once per transmission, and we use a hopping pattern that uses all 150
freqencies exactly once before repeating, and since a "transmission"
occurs for either 1.5 seconds or 0.5 seconds every 2 seconds, 300
seconds will elapse between reuse of any one given frequency channel.
300-seconds is 5-minutes.

Say that you are the receiver in the SSB QSO, and there is this
distant FHSS PACTOR system running continuously (what real system
does this? Even very active BBS's don't run continuously!)--you're
going to (maybe) loose 1.5 seconds of your QSO at some random
instant inside each 5-minute window. You can't predict the instant,
so you can't even be prepared to listen for it. If you're in the
2/3 of the country that can't hear the FHSS, or if his signal is
weaker than your SSB QSO, then even if you do hear it, you didn't
loose any information. What if your QSO partner is in between
sylables, so he really isn't transmitting any information at the
instant the FHSS comes by, even with a blasting signal? That's
what I mean by "maybe."

So, what about all the other SSB QSO's that are going on simultaneously?
How recently have you studied a spectrum analyzer frame of the 15M
band? (Just one frame, once scan of the band, set so that you can
resolve the energy in each 3 KHz channel in the band) How many of
those channels are occupied? The highest I've seen lately is about
15, which is about 10% utilization. I've done a fair amount of listening;
I've published my findings about 2M and 450, in the most recent
round of comments on the NPRM to change the SS Rules. It would be
nice for someone else to do a similar study. What is important is,
if there's no signal on a channel, then the FHSS isn't interfering
by hopping there. That's roughly 90% of the time.

Statistically, the FHSS station is seeing the 10% hit situation,
not the 0.66% hit that the SSB station sees. Because of the
"maybe" multipliers discussed earlier, the 10% drops to about 2%
real data corruptions. The digital nature of PACTOR will either
successfully use the builtin FEC to correct the error resulting
from the hit, or will use a retransmission to get the good data.
All entirely acceptable.

All of the above is theoretical. The proof of all this is in the
EXPERIENCE of it. Building a sample interference generator is
fairly easy: use a PC to key a signal generator into a nearby
antenna while listening to some SSB QSO. See if you can detect the
1.5-sec burst, not knowing when it will happen, unless the generator
completely overpowers the receiver AGC (thus lengthening the signal
outage to much longer than the actual collision). Until you've
actually heard this demo LIVE, the above is all just talk.
Change the demo so that the PC "warns" you that the collision
is about to occur, so you can assess the impact of the collision.
Then see what you think. Try counting all the other time QRN
interference blocks the channel you're listening to. Around here,
the number gets pretty large in a 5-minute interval.

I'd be interested to hear your reaction to this experience.

best regards/bob K6KGS

42. Re: [SS:2063] Re:Bell Labs scientists shatter limit on fixed

From: Jeff Millar <jeff@wa1hco.mv.com>
Date: Sun, 13 Sep 1998 10:02:29 -0400
To: ss@tapr.org
Message-ID: <199809131355.JAA09431@mercury.mv.net>
Rendered body type: text/plain

At 02:07 PM 9/12/98 -0500, you wrote:
>>
>> At 09:06 PM 9/11/98 -0500, Brett wrote:
>> >Well, phase and time are essentially the same thing. Time delays
>> >create the differences in phase that allow the antennas to pick out a
>> >particular sender and reject others.
>>
>> A beamformer can use phase shifters or delay lines as you point out.
>> However, they differ in that a phase shifter has constant phase over
>> frequency and a delay line has constant delay over frequency
>> (approximately). So, designers prefer to use delay elements when the

>> antenna must form a beam over a range of frequencies.
>
>
>Don't you mean they prefer phase shifters? A constant delay
>element would produce varying phase over frequency and therefore
>move the beam over frequency. Am I wrong?

Imagine two antennas with a wave front coming in from an angle. To form
a beam, the two waves must be aligned in phase. But the phase
shift comes from the speed of light delay between the arrival times to
the two antennas. This delay value doesn't depend on frequency. So
to form a wide band beam, use delay elements in the beam former.

jeff

43. RE: 2065] reply to Ed Hare, W1RFI, re 15M DSSS examples

From: "Hare, Ed, W1RFI" <ehare@arrl.org>
Date: Mon, 14 Sep 1998 13:12:01 -0400
To: ss@tapr.org
Cc: "Robert A. Buaas" <buaas@wireless.net>
Message-ID: <E12EC3E9FA06D211817D00805FC743CC08AAD2@MAIL_SERV>
Rendered body type: text/plain

Hi, Bob,

Thanks for the feedback. Let me offer a bit of background. I do hope
you would understand that I do not intend at all to be obstructionist,
but do want to see these issues considered as we, as a service,
determine how to proceed.

>As a member of the "proponent" side of this discussion, I'd like to
>offer some constructive criticism. It would seem that the examples
>you've chosen are designed to inflame the casual, inexperienced reader,
>rather than to inform. It seems to me that responsible members of the
>ARRL Labs might want to conduct realistic experiments and take actual
>data, rather than conjecture about the consequences.

I, too, consider myself a proponent of SS, although not without some
reservations. I personally believe that the ARS has NOT explored this
mode of operation in as much as it has other modes (the important work
of you and your colleagues is a notable exception!) and, in not doing
so, is falling behind the power curve wrt other radio services.

This discussion on RRAP started wrt DSSS, so I continued the discussion
in that vein. Admittedly, DSSS on HF probably does represent the worst
case wrt interference to narrowband users, but that was chosen for this
discussion as part of the ongoing discussion, certainly not to inflame.

OTOH, within that context, I don't think that the examples I chose,
although chosen to demonstrate that there could be significant potential
for interference to narrowband users, are really atypical. How many
stations are located line of sight within 10 kM of other stations?
Could it not be proposed that SS be allowed on 21 MHz with 100 W power?
What percentage of communications using SS on 21 MHz NEED 100 W to be
completed? If only a small percentage needed to run that power level on
21 MHz, the result would be significant, would it not?

I am just coming off of two long projects - ARRL's involvement with the
FCC RF-exposure regulations and a rewrite of the ARRL RFI book, both now
complete. Not that I have a lot of time on my hands, but I have been
interested in SS and want to study it and determine just what role I can
play (personally and ?professionally) in the processes under hand. I
would like to do some actual testing (the Lab does have access to a bit
of test equipment), but, as you note later in your post, building a
complicated SS system does take a bit of time. (Perhaps you and I could
have some discussion about how I could help.)

>Since when is it (a) permitted by the Rules, and/or (b) dictated by
>Good Amateur Practice to intentionally interfere, perhaps by
>needlessly running the "legal limit?" Yes, it happens all the time;
>but should it be encouraged? Those of us that advocate unlimited SS
>also feel that far better observance of ALL the Rules are needed,
>particularly the seldom-observed Rule about using minimum power.

You are preaching to the choir on this on, Bob - my current major HF
activity is to work 10 milliwatt QRP (30 states worked so far, all in
the CW Sweepstakes - hey, that is SS, too, is it not? :-)) But let's
face it, Bob, most hams do NOT seem to obey the minimum power rule, and
probably never will. The ARRL had encouraged hams to do so, at least in

spirit, although there is little the League can do, practically, about the power use of hams. I have little doubt that the current spate of SS experimenters will follow the minimum necessary power rules, due in part to the fact that they are trying to assess the interference potential from SS to narrowband users and this is not done by running as much power as possible. I also have little doubt that once SS moves out of the experimental realm (within the ARS), and becomes a mainstream mode, it will be in use by the same hams who do not follow the minimum-power rules and, sans automatic power control, would probably operate pretty much as usual. And the analysis I offered does not presuppose that anyone is using more power than necessary; we certainly can't say that about the 100-milliwatt station and, in many cases, 100 watts IS the necessary power on marginal paths.

>In choosing your examples, you said nothing about WHY you selected
>DSSS, 100 KHz spreading bandwidth, and the power levels. You didn't
>say what you were trying to accomplish.

As stated, most of this stemmed from a discussion about DSSS and HF on RRAP. I selected the power levels arbitrarily, wanting to select what I believed to be a reasonable minimum power level and a probable "high power" level that would be used by two stations communicating under marginal propagation conditions. After all, if we do populate HF with SS stations, I think it reasonable to assume that they will want to do the same types of communicating as are done now on narrowband, and that would include a significant amount of marginal-path QSOs. The 100-spread was chosen to represent a balance between a minimal spread in the tens of kHz (offered by some to be too small to be beneficial on HF) and a spread across an entire ham band (or even multiple bands). It, too, allowed me to do the math in my head. :-)

>Inappropriate design and
>operating choices lead to interference generation in all radio modes,
>not just SS. Certainly, each choice you made exemplified the case
>for causing wideband interference. To me, that is not an indictment
>of SS, nor a valid argument for preventing its authorization. To
>cite a more widely understood example, an equivalent choice would
>be to attach a nonlinear power amplifier to an SSB exciter and radiate
>the resulting signal. The difference in the two cases is that almost
>everyone understands the consequences of the latter, while as
>a result of so little understanding and experience with SS, almost
>no one recognizes the inadvisibility of the former.

I don't agree that the two cases are equivalent. The case of the non-linear amplifier is indeed well understood, as something that should NOT be done. My analysis was not done to state categorically that HF SS should not be allowed on HF (and, I will add, that my role in the ARRL Lab does not lend any weight to my ideas on that as a policy matter), but as an attempt for me to begin my understanding of the interference potential of SS on HF.

>As I've said many times in my lectures on the subject, SS is a
>significantly complicated digital system. Unfortunately, the
>level of that complexity exceeds the level of expertise and/or
>enthusiasm of most Amateurs. Those of us who have built real
>systems know that it can easily take a year or more to build one.

This is certainly why there are so few experimenters on SS. Until such time as manufacturers start making ham gear to do turnkey SS, that will probably be the case. That is why, IMHO, it is necessary that we do carve out space on ham bands and start to demonstrate the benefits of SS.

<snippage - I want to ask you some questions about the system you postulated.>

>What happened to Amateur Radio's obligation to contribute to
>advancing the state of the art, which is one of the justifications
>for giving us the spectrum we occupy? What about attracting
>young people into Ham Radio and into the art of Radio Engineering?
>Amateur Radio as we know it is dying, and little we're doing
>is changing that direction. The Internet is a powerful draw
>for today's students and budding engineers, providing much more
>simply than we, a means to communicate globally with much less effort.

>SS (in all its many and varied forms), at least, has the intellectual
>and practical challenge that might interest newcomers otherwise lost.

I agree wholeheartedly; it is important that Amateur Radio continue its

tradition of making contributions to the radio arts. While I do not
feel that our contributions over recent years have been zero, I would
agree that there is plenty more that could and should be done.

I don't agree that ham radio is dying; why, if you factor in the effect
on our numbers caused by the transition from 5-year to 10-year licenses,
I think that we have more hams now than at any other time in amateur
history. But the large influx of newcomers have not yet had time to
explore new technology and have, in general, not had a lot of Elmering
(more newcomers than Elmers, I fear). The fact that some new
technologies might take over a year for a ham to implement does not
help.

What does attract hams to radio is not internet, not communications, but
radio. When I was licensed in 1963, I could talk to Ohio, or Australia,
any time I wanted, by picking up the telephone. But I found a love of
electronics and radio, and thus was WN1CYF born. And back then, I
wasn't making state-of-the-art advances; I, like the new hams of today,
was too busy learning the basics of communicating on ham radio. I think
that, with encouragement, the new hams of today can learn the finer
technical traditions of amateur radio, and perhaps a few of them will
help us all move things steadily forward.

73,
Ed, W1RFI

44. TAPR.ORG Down and now Back

From: "Greg Jones, WD5IVD" <wd5ivd@tapr.org>
Date: Mon, 14 Sep 1998 21:09:36 -0500
To: "HF SIG list   mailing"<hfsig@tapr.org>, " Spread Spectrum "<ss@tapr.org>,
" TAPR/AMSAT DSP "<dsp@tapr.org>,
"APRS SIG list   mailing"<aprssig@tapr.org>,
"NETSIG list   mailing"<netsig@tapr.org>,
"BBS SIG list   mailing"<bbssig@tapr.org>,
" tacgps "<tacgps@tapr.org>, aprsnews, mic-e,
TAPR Regional Freq <regional_freq@tapr.org>
Message-ID: <v0401170fb2237bbfafc8@[207.8.125.53]>
Rendered body type: text/plain

TAPR.ORG was down on Saturday for a system upgrade. We installed a new
processor board as well as added more memory and a new 9G HD.

Sunday morning very early, the root drive crashed and burned. Lee spent
Sunday and today (Monday) recovering from the crash on root. We had backed
up the system just before the upgrade, so we didn't get hit very hard. We
took this time to also upgrade the OS on the system, which we had planned
to in the future.

Lee got the system back operational about 6pm tonight and all aspects of
the system should be operational by this posting. We will be spending the
rest of tonight doing checks on various automatic operations to make sure
that everything is running correctly.

Cheers - Greg

Greg Jones, WD5IVD
President TAPR (http://www.tapr.org)
PhD Candidate, Instructional Technology, UT Austin

email: wd5ivd@tapr.org
web: http://www.tapr.org/~wd5ivd

Experience is what you get when you were expecting something else.

45. Re: [SS:2069] Re: Re: SS on HF

From: Jon Bloom <jbloom@mgate.arrl.org>
Date: Tue, 15 Sep 1998 06:25:35 -0400
To: ss@tapr.org
Message-ID: <35FE409F.87BD3F53@arrl.org>
Rendered body type: text/plain

Robert A. Buaas wrote:
>
> Say that you are the receiver in the SSB QSO, and there is this
> distant FHSS PACTOR system running continuously (what real system
> does this? Even very active BBS's don't run continuously!)--you're
> going to (maybe) loose 1.5 seconds of your QSO at some random
> instant inside each 5-minute window. You can't predict the instant,

> so you can't even be prepared to listen for it. If you're in the
> 2/3 of the country that can't hear the FHSS, or if his signal is
> weaker than your SSB QSO, then even if you do hear it, you didn't
> loose any information. What if your QSO partner is in between
> sylables, so he really isn't transmitting any information at the
> instant the FHSS comes by, even with a blasting signal? That's
> what I mean by "maybe."

Almost any useful system you examine will be okay if you postulate only one SS station. But what if there are 100 such FHSS transmitters that the SSB station can hear at a significant signal level -- not an outrageous number for a popular HF mode when the band is open. How many seconds of SSB reception does the station lose, and does that constitute harmful interference?

As far as I'm concerned -- and I know Ed feels the same way -- it would be great to see SS make its way into HF use. But before that can happen there has to be a reasonable consideration of the effect on existing narrowband users. By which I do *not* mean that those users must see no additional interference from SS, only that such interference should not be extreme or entirely disruptive of narrowband communications. Such a reasonable consideration has to be based on a reasonable number (not 1) of SS transmitters in simultaneous operation.

> nice for someone else to do a similar study. What is important is,
> if there's no signal on a channel, then the FHSS isn't interfering
> by hopping there. That's roughly 90% of the time.

That's not what's important to the station being interfered with. What's important is that if the FHSS stations are hopping across the entire band, and if the narrowband station is experiencing troublesonme interference from them, there is no recourse; the narrowband station is off the air, period. It doesn't matter how many narrowband channels are unoccupied -- they are all equally unusable by the narrowband station. Knowing that only a few stations are experiencing that degree of interference is no comfort to those who are experiencing it!

I still don't see how a significant amount of SS activity can share spectrum with narrowband signals. One or two SS stations, yes. But if SS is ever to be anything more than a curiosity we need to figure out how to accommodate significant numbers of SS stations without precluding narrowband activity. Ay UHF and above we have more flexibility; we can segregate SS and narrowband operations by frequency. At HF that's problematic.

73, Jon
--
Jon Bloom, KE3Z
jbloom@arrl.org
Electronic Publications Manager
(CD-ROM publications, software products and Web site)

46. Re: [SS:2069] Re: Re: SS on HF

From: Gerry Creager <n5jxs@tamu.edu>
Date: Mon, 14 Sep 1998 22:44:21 -0500
To: ss@tapr.org
Message-ID: <35FDE295.6C35@tamu.edu>
Rendered body type: text/plain

Robert A. Buaas wrote:
>
> Ed--
>
> For the record, my interest in radio goes back to before I started
...

Bob,

We spoke several years ago, and you gave me the telephone and e-mail SS-101 tutorial.

I still follow this list, occasionally as a spy for the frequency coordination commmunity (not really, but someone in the commuity MUST have a working knowledge of new technologies...) and also as an interested party.

I'm not sure why Ed made what amounts to an inflammatory review on a biased list. It is uncharacteristic of him, and an unusual show of dissent within the HQ ranks at the League.

That said, a question: What is the real story with FHSS on the amateur bands, with regard to sequences, adaptive algorithms, length of the PN code, dwell time, etc? In other words, in my copious free time ('bout as much as when we last talked, divided by 4) could I generate a 420-450 FHSS system to test susceptability in my local area (pleasantly down on the occupany scale) and still fall within the rules, if I wanted to chip at, say, 25 MHz, with a long sequence?

Thanks, & 73,
Gerry Creager
n5jxs@tamu.edu

47. Re: [SS:2070] Re:Bell Labs scientists shatter limit on fixed

From: Jacob W Janovetz <janovetz@ews.uiuc.edu>
Date: Tue, 15 Sep 1998 08:05:56 -0500 (CDT)
To: ss@tapr.org
Message-ID: <199809151305.IAA05500@eesn15.ews.uiuc.edu>
Rendered body type: text/plain

Thanks, Jeff (and to Donald) for their correction.
"I get it now..."

    Cheers,
    Jake

>
> At 02:07 PM 9/12/98 -0500, you wrote:
> >>
> >> At 09:06 PM 9/11/98 -0500, Brett wrote:
> >> >Well, phase and time are essentially the same thing. Time delays
> >> >create the differences in phase that allow the antennas to pick out a
> >> >particular sender and reject others.
> >>
> >> A beamformer can use phase shifters or delay lines as you point out.
> >> However, they differ in that a phase shifter has constant phase over
> >> frequency and a delay line has constant delay over frequency
> >> (approximately). So, designers prefer to use delay elements when the
> >> antenna must form a beam over a range of frequencies.
> > >
> > >
> > >Don't you mean they prefer phase shifters? A constant delay
> > >element would produce varying phase over frequency and therefore
> > >move the beam over frequency. Am I wrong?
> >
> > Imagine two antennas with a wave front coming in from an angle. To form
> > a beam, the two waves must be aligned in phase. But the phase
> > shift comes from the speed of light delay between the arrival times to
> > the two antennas. This delay value doesn't depend on frequency. So
> > to form a wide band beam, use delay elements in the beam former.
> >
> > jeff
> >

--
   janovetz@uiuc.edu | Once you have flown, you will walk the earth with
 University of Illinois | your eyes turned skyward, for there you have been,
                        | there you long to return.   -- da Vinci
        PP-ASEL | http://www.ews.uiuc.edu/~janovetz/index.html

48. Re: [SS:2] Re: Re: SS on HF

From: "Robert A. Buaas" <buaas@wireless.net>
Date: Tue, 15 Sep 1998 10:02:14 -0700 (PDT)
To: ss@tapr.org
Message-ID: <199809151702.KAA14346@uv.wireless.net>
Rendered body type: text/plain

Hi Gerry--

yes, we all are busy...

the Rules are The Rules, until they are changed. Regards sequences,
the current 97.311 gives you 3 sequences, none of which are "long".
You can do anything you want under the STA(s), so that's the
vehicle you probably want to use, especially if you want an adaptive
sequence (M-sequences are very fixed, as you know). Do you really mean
"chip at, say, 25 MHz"... the term "chip" most often refers to DS,

whereas "hop" refers to FH. Most FH is "slow-FH," defined as hopping
slower that 1-bit-time (assuming digital modulation). Fast hop is
now possible with the advent of DDS (direct digital frequency synthesizers).
Prior to DDS, very fancy comb generators were used to synthesize.
So, if you'll tell me a little more about what you'd like to accomplish,
I'd be happy to make a more concrete recommendation....

You might just want to start with an ordinary FM system, program it
using your favorite general-purpose PC to hop at whatever rate the
VCO/PLL in the radio will move, and see what you learn. If you want
an RF module "off the shelf," try using FT-741 mobile modules (avail
from AES/Las Vegas). It has a very mediocre synth, but it works,
and it fairly easy to get going... And you learn a lot in the process.

replacing the internal synth with dual/external synths really causes
the gadget to "come to life"...

best regards/bob K6KGS

49. RE: 2] Re: Re: SS on HF

From: "Hare, Ed, W1RFI" <ehare@arrl.org>
Date: Tue, 15 Sep 1998 13:49:55 -0400
To: ss@tapr.org
Message-ID: <E12EC3E9FA06D211817D00805FC743CC08AE0B@MAIL_SERV>
Rendered body type: text/plain

Hello, Gerry,

>I'm not sure why Ed made what amounts to an inflammatory review on a
>biased list. It is uncharacteristic of him, and an unusual show of
>dissent within the HQ ranks at the League.

I trust that my followup posts explained things a bit. I did note that
tapr.org was having some computer difficulties, so just to be sure, let
me add to what I said.

Actually, when I posted that to the reflector, I didn't intend at all to
be inflammatory. The discussion on rrap that started all this was
started when someone offered that DSSS on HF would not cause any harmful
interference to narrowband users. I offered my analysis to demonstrate
to myself that, at least under some circumstances, it would. The
general consensus I seem to read here is that SFHSS would be the best
choice for HF, so I don't think that we are in any serious disagreement
wrt DSSS on HF.

I am not at all sure what you mean by an "unusual show of dissent within
the ranks at the League." Perhaps you could explain a bit. As a person
interested in SS, for the same reasons as anyone else here - it IS the
cutting edge of technology and, IMHO, hams can make a difference and
advance the state of the art. However, SS would not exist in a vacuum
and I do believe that it IS appropriate, and necessary, to evaluate the
effect on other users of the spectrum. A major strength of the ARS is
its diversity and any change would need to be evaluated by analyzing the
benefits of that change vis a vis the effect on other users and modes.
That is, IMHO, good engineering, not inflammation or dissent.

I did offer this to this list because I found the results to be a bit
unexpected to me, and somewhat disturbing. I felt that this list would
be the best "sanity" check I could find, and that if I had made any
errors in my assumptions or calculations, my peers on this list would be
glad to call them to my attention. :-) I must admit I was a bit
surprised to see some of what was read into what I had to say and what I
was trying to accomplish. Perhaps some here don't know me well enough to
know that I always strive to have my participation be constructive and
add to the discussions at hand (I don't always succeed, but I do try.)

IMHO, the issues I raised must be considered as SS technology is
developed and implemented in the Amateur Radio Service. Yes, they are
tough questions, and they may apply to more than simply HF. I think,
for example, that my 100 mW DSSS example from a station 10 kM away
might very well apply to VHF and up, as well. I invite discussion, and
I invite criticism of the technical merits (or demerits) of what I put
forth. And, if the result is that systems are proposed that do NOT have
the effect I described, even if to show that what I offered was doom and
gloom, I would think that my raising this issue would have a very
positive end result. :-)

73, Ed, W1RFI
ARRL Lab

50. Discussion

From: "Greg Jones, WD5IVD" <wd5ivd@tapr.org>
Date: Tue, 15 Sep 1998 13:16:44 -0500
To: " Spread Spectrum "<ss@tapr.org>
Message-ID: <v0401170db2245f2682b8@[128.83.74.103]>
Rendered body type: text/plain

Please lets keep the politcal over tones out of some of the exchanges. We are all here to try to make SS work in the hobby.

The technical dscussion and concept exchange thus far has been very good quality.

If we can continue the educational aspects of the flow, then we are all ahead of the game.

Cheers - Greg

Greg Jones, WD5IVD Austin, Texas
wd5ivd@tapr.org http://www.tapr.org/~wd5ivd

51. Re: [SS:5] RE: 2] Re: Re: SS on HF

From: Dewayne Hendricks <dewayne@warpspeed.com>
Date: Tue, 15 Sep 1998 11:41:28 -0700
To: ss@tapr.org
Message-ID: <v0402052eb22465157534@[192.168.1.7]>
Rendered body type: text/plain

At 12:52 -0500 9/15/98, Hare, Ed, W1RFI wrote:
>I trust that my followup posts explained things a bit. I did note that
>tapr.org was having some computer difficulties, so just to be sure, let
>me add to what I said.

Nothing but your original posting has shown up on the list so far.
If you replied to anything that Bob Buaas posted, it has yet to show up.
You are correct about the tapr.org problems. Things still seem to be a bit
sluggish!!

-- Dewayne
--
~~~~~~
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~~~~~~

52. RE: 7] RE: 2] Re: Re: SS on HF

From: "Hare, Ed, W1RFI" <ehare@arrl.org>
Date: Tue, 15 Sep 1998 15:26:41 -0400
To: ss@tapr.org
Message-ID: <E12EC3E9FA06D211817D00805FC743CC08AE8E@MAIL_SERV>
Rendered body type: text/plain

-----Original Message-----
From: Dewayne Hendricks [SMTP:dewayne@warpspeed.com]
Sent: Tuesday, September 15, 1998 2:47 PM
To: ss@tapr.org
Subject: [SS:7] RE: 2] Re: Re: SS on HF

At 12:52 -0500 9/15/98, Hare, Ed, W1RFI wrote:
>I trust that my followup posts explained things a bit. I did note that
>tapr.org was having some computer difficulties, so just to be sure, let
>me add to what I said.

Nothing but your original posting has shown up on the list so
far.
If you replied to anything that Bob Buaas posted, it has yet to show up.
You are correct about the tapr.org problems. Things still seem to be a
bit
sluggish!!

* Dewayne

Thanks, Dewayne,

If this is a duplicate, please forgive me, but it may help ensure that

I, too, can be a constructive participant on this reflector. This
reflected back to me, but if distribution was spotty, I will resend.

73,
Ed

Repost:

Hi, Bob,

Thanks for the feedback. Let me offer a bit of background. I do hope
you would understand that I do not intend at all to be obstructionist,
but do want to see these issues considered as we, as a service,
determine how to proceed.
        >As a member of the "proponent" side of this discussion, I'd
like to
        >offer some constructive criticism. It would seem that the
examples
        >you've chosen are designed to inflame the casual, inexperienced
reader,
        >rather than to inform. It seems to me that responsible members
of the
        >ARRL Labs might want to conduct realistic experiments and take
actual
        >data, rather than conjecture about the consequences.

I, too, consider myself a proponent of SS, although not without some
reservations. I personally believe that the ARS has NOT explored this
mode of operation in as much as it has other modes (the important work
of you and your colleagues is a notable exception!) and, in not doing
so, is falling behind the power curve wrt other radio services.
This discussion on rec.radio.amateur.policy started wrt DSSS, so I
continued the discussion in that vein. Admittedly, DSSS on HF probably
does represent the worst case wrt interference to narrowband users, but
that was chosen for this discussion as part of the ongoing discussion,
certainly not to inflame.
OTOH, within that context, I don't think that the examples I chose,
although chosen to demonstrate that there could be significant potential
for interference to narrowband users, are really atypical. How many
stations are located line of sight within 10 kM of other stations?
Could it not be proposed that SS be allowed on 21 MHz with 100 W power?
What percentage of communications using SS on 21 MHz NEED 100 W to be
completed? If only a small percentage needed to run that power level on
21 MHz, the result would be significant, would it not?
I am just coming off of two long projects - ARRL's involvement with the
FCC RF-exposure regulations and a rewrite of the ARRL RFI book, both now
complete. Not that I have a lot of time on my hands, but I have been
interested in SS and want to study it and determine just what role I can
play (personally and ?professionally) in the processes under hand. I
would like to do some actual testing (the Lab does have access to a bit
of test equipment), but, as you note later in your post, building a
complicated SS system does take a bit of time. (Perhaps you and I could
have some discussion about how I could help.)
        >Since when is it (a) permitted by the Rules, and/or (b)
dictated by
        >Good Amateur Practice to intentionally interfere, perhaps by
        >needlessly running the "legal limit?" Yes, it happens all the
time;
        >but should it be encouraged? Those of us that advocate
unlimited SS
        >also feel that far better observance of ALL the Rules are
needed,
        >particularly the seldom-observed Rule about using minimum
power.

You are preaching to the choir on this on, Bob - my current major HF
activity is to work 10 milliwatt QRP (30 states worked so far, all in
the CW Sweepstakes - hey, that is SS, too, is it not? :-)) But let's
face it, Bob, most hams do NOT seem to obey the minimum power rule, and
probably never will. The ARRL had encouraged hams to do so, at least in
spirit, although there is little the League can do, practically, about
the power use of hams. I have little doubt that the current spate of SS
experimenters will follow the minimum necessary power rules, due in part
to the fact that they are trying to assess the interference potential
from SS to narrowband users and this is not done by running as much
power as possible. I also have little doubt that once SS moves out of
the experimental realm (within the ARS), and becomes a mainstream mode,
it will be in use by the same hams who do not follow the minimum-power
rules and, sans automatic power control, would probably operate pretty

much as usual. And the analysis I offered does not presuppose that anyone is using more power than necessary; we certainly can't say that about the 100-milliwatt station and, in many cases, 100 watts IS the necessary power on marginal paths.

>In choosing your examples, you said nothing about WHY you selected
>DSSS, 100 KHz spreading bandwidth, and the power levels. You didn't
>say what you were trying to accomplish.

As stated, most of this stemmed from a discussion about DSSS and HF on RRAP. I selected the power levels arbitrarily, wanting to select what I believed to be a reasonable minimum power level and a probable "high power" level that would be used by two stations communicating under marginal propagation conditions. After all, if we do populate HF with SS stations, I think it reasonable to assume that they will want to do the same types of communicating as are done now on narrowband, and that would include a significant amount of marginal-path QSOs. The 100-kHz spread was chosen to represent a balance between a minimal spread in the tens of kHz (offered by some to be too small to be beneficial on HF) and a spread across an entire ham band (or even multiple bands). It, too, allowed me to do the math in my head. :-)

>Inappropriate design and
>operating choices lead to interference generation in all radio modes,
>not just SS. Certainly, each choice you made exemplified the case
>for causing wideband interference. To me, that is not an indictment
>of SS, nor a valid argument for preventing its authorization. To
>cite a more widely understood example, an equivalent choice would
>be to attach a nonlinear power amplifier to an SSB exciter and radiate
>the resulting signal. The difference in the two cases is that almost
>everyone understands the consequences of the latter, while as
>a result of so little understanding and experience with SS, almost
>no one recognizes the inadvisibility of the former.

I don't agree that the two cases are equivalent. The case of the non-linear amplifier is indeed well understood, as something that should NOT be done. My analysis was not done to state categorically that HF SS should not be allowed on HF (and, I will add, that my role in the ARRL Lab does not lend any weight to my ideas on that as a policy matter), but as an attempt for me to begin my understanding of the interference potential of SS on HF.

>As I've said many times in my lectures on the subject, SS is a
>significantly complicated digital system. Unfortunately, the
>level of that complexity exceeds the level of expertise and/or
>enthusiasm of most Amateurs. Those of us who have built real
>systems know that it can easily take a year or more to build one.

This is certainly why there are so few experimenters on SS. Until such time as manufacturers start making ham gear to do turnkey SS, that will probably be the case. That is why, IMHO, it is necessary that we do carve out space on ham bands and start to demonstrate the benefits of SS.

<snippage - I want to ask you some questions privately about the system you postulated.>

>What happened to Amateur Radio's obligation to contribute to
>advancing the state of the art, which is one of the justifications
>for giving us the spectrum we occupy? What about attracting
>young people into Ham Radio and into the art of Radio Engineering?
>Amateur Radio as we know it is dying, and little we're doing
>is changing that direction. The Internet is a powerful draw
>for today's students and budding engineers, providing much more
>simply than we, a means to communicate globally with much less effort.

>SS (in all its many and varied forms), at least, has the intellectual
>and practical challenge that might interest newcomers otherwise lost.

I agree wholeheartedly; it is important that Amateur Radio continue its tradition of making contributions to the radio arts. While I do not feel that our contributions over recent years have been zero, I would agree that there is plenty more that could and should be done.
I don't agree that ham radio is dying; why, if you factor in the effect on our numbers caused by the transition from 5-year to 10-year licenses, I think that we have more hams now than at any other time in amateur history. But the large influx of newcomers have not yet had time to explore new technology and have, in general, not had a lot of Elmering (more newcomers than Elmers, I fear). The fact that some new technologies might take over a year for a ham to implement does not help.
What does attract hams to radio is not internet, not communications, but radio. When I was licensed in 1963, I could talk to Ohio, or Australia, any time I wanted, by picking up the telephone. But I found a love of electronics and radio, and thus was WN1CYF born. And back then, I wasn't making state-of-the-art advances; I, like the new hams of today, was too busy learning the basics of communicating on ham radio. I think that, with encouragement, the new hams of today can learn the finer technical traditions of amateur radio, and perhaps a few of them will help us all move things steadily forward.

73,
Ed, W1RFI

53. Re: [SS:5] RE: 2] Re: Re: SS on HF

From: "Frederick M. Spinner" <fspinner@hotmail.com>
Date: Tue, 15 Sep 1998 20:39:25 GMT
To: ss@tapr.org
Message-ID: <19980915203925.22471.qmail@hotmail.com>
Rendered body type: text/plain

I also monitor this list, and don't post much. In the past, we have had people like Bill Tynan, try to cause regulation to stop SS development because of his fear that SS would interfere with his weak signal pursuits.

Although I respect him greatly, I think that we should be very careful to regulate against emerging technologies until the proper amount of experimentation has been caried out to determine if the technology is "bad"! It's difficult to get back privledges that have been taked away from uncle sam.

His direct suggestions on the behalf of AMSAT, and the Central States VHF society in the past have alienated some of us more technically oriented hams. It literally caused my to let my AMSAT membership lapse for a year. I'll do it again if attitudes like that are sustained. I still never heard what happened to the proposal at CSVHF 98. It was presented but never voted on by the general membership.
I certainly don't support it, and I do weak signal work!

Though you didn't directly state this in your message, it sounded heavily like an implication that we should ban SS on HF. I think on the contrary, SS on HF could be another amateur radio technical breakthrough. Most commercial SS is FHSS for ECCM (Electronic Counter-Counter Measures) and not for actually improving HF comm.

So, no I didn't think your message was so bad, and in fact I joined the ARRL due to its recent wave of forward thinking-- both about SS and the licensing issues. But there has been a history of AMSAT, Repeater Coordinators, etc. with their NIMBY statements......

73, Fred KA9VAW/0

(See you all at CSVHF '99 in my home QTH of Cedar Rapids -- I'm the "publicity" chairman, so you'll hear more from me in the future)

>Date: Tue, 15 Sep 1998 12:52:28 -0500 (CDT)
>Reply-To: ss@tapr.org
>From: "Hare, Ed, W1RFI" <ehare@arrl.org>
>To: ss@tapr.org
>Subject: [SS:5] RE: 2] Re: Re: SS on HF
>
>Hello, Gerry,
>
>>I'm not sure why Ed made what amounts to an inflammatory review on a
>>biased list. It is uncharacteristic of him, and an unusual show of
>>dissent within the HQ ranks at the League.
>

>I trust that my followup posts explained things a bit. I did note that
>tapr.org was having some computer difficulties, so just to be sure, let
>me add to what I said.
>
>Actually, when I posted that to the reflector, I didn't intend at all
to
>be inflammatory. The discussion on rrap that started all this was
>started when someone offered that DSSS on HF would not cause any
harmful
>interference to narrowband users. I offered my analysis to demonstrate
>to myself that, at least under some circumstances, it would. The
>general consensus I seem to read here is that SFHSS would be the best
>choice for HF, so I don't think that we are in any serious disagreement
>wrt DSSS on HF.
>
>I am not at all sure what you mean by an "unusual show of dissent
within
>the ranks at the League." Perhaps you could explain a bit. As a
person
>interested in SS, for the same reasons as anyone else here - it IS the
>cutting edge of technology and, IMHO, hams can make a difference and
>advance the state of the art. However, SS would not exist in a vacuum
>and I do believe that it IS appropriate, and necessary, to evaluate the
>effect on other users of the spectrum. A major strength of the ARS is
>its diversity and any change would need to be evaluated by analyzing
the
>benefits of that change vis a vis the effect on other users and modes.
>That is, IMHO, good engineering, not inflammation or dissent.
>
>I did offer this to this list because I found the results to be a bit
>unexpected to me, and somewhat disturbing. I felt that this list would
>be the best "sanity" check I could find, and that if I had made any
>errors in my assumptions or calculations, my peers on this list would
be
>glad to call them to my attention. :-) I must admit I was a bit
>surprised to see some of what was read into what I had to say and what
I
>was trying to accomplish. Perhaps some here don't know me well enough
to
>know that I always strive to have my participation be constructive and
>add to the discussions at hand (I don't always succeed, but I do try.)
>
>IMHO, the issues I raised must be considered as SS technology is
>developed and implemented in the Amateur Radio Service. Yes, they are
>tough questions, and they may apply to more than simply HF. I think,
>for example, that my 100 mW DSSS example from a station 10 kM away
>might very well apply to VHF and up, as well. I invite discussion, and
>I invite criticism of the technical merits (or demerits) of what I put
>forth. And, if the result is that systems are proposed that do NOT
have
>the effect I described, even if to show that what I offered was doom
and
>gloom, I would think that my raising this issue would have a very
>positive end result. :-)
>
>73, Ed, W1RFI
>ARRL Lab
>
>

_____
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54. Help! Small community network trying to deal with Big Guys

From: Brett Glass <brett@lariat.org>
Date: Tue, 15 Sep 1998 14:46:47 -0600
To: ss@tapr.org
Message-ID: <4.1.0.52.19980915132730.03fff450@mail.lariat.org>
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LARIAT (http://www.lariat.org), a small, non-profit community network, is trying to deal with the potentially disastrous interference that would be caused by the introduction of Metricom's Ricochet system in our town by K N Energy. Here's an update on what some of the more flamboyant in town are calling the "Radio Range War," though I personally hope it doesn't escalate into any kind of war at all before it's resolved.

A white paper at http://www.lariat.org/metricom.html describes the overall

situation. It provides references to prior tests demonstrating interference, and also documents tests we ourselves performed in a city where the Metricom system had been deployed. K N Energy's local manager (who admits that he is not a ham or an engineer and does not know how to use the Web) nonetheless claims that there will be NO interference, or that his transmitters can be placed to avoid it. (I've tried to explain that transmitter placement is unlikely to be a good solution. We use some omnidirectional antennas. LARIAT's members change, and some move between buildings from time to time. Also, the Metricom transmitters ratchet up their power to blot out other units even if they're farther away.)

The manager asked that we do ANOTHER interference test, in which he would secure a "temporary" permit from the City to mount about 6 pole-top units.

We see at least three problems with this.

First of all, only 6 units -- as opposed to the 80 or more that would be deployed when the system was fully rolled out -- would not be enough for a good test. And if a directional antenna that's pointed at our omni eventually looks past it at one of their pole-top units (or if it's even near the middle of the front lobe), it won't work. That pole-top unit might not be one that's installed at the time of the test.

Second, it would be a trick to generate representative traffic that would simulate a production environment. One or two nodes couldn't simulate the effects of many customers scattered about town, so dozens of Ricochet "modems" would need to be deployed in the test area and attached to computers.

Finally, we're concerned about the camel's nose being allowed into the tent. It's easy to imagine that, having mounted 6 pole-top units and turned on its hub, K N Energy would go back to the City Council and say, "Well, we've already mounted these transmitters at X thousand dollars apiece. So what if there's interference! do you want to waste that investment?"

Our counter-proposal was to take WaveLAN equipment to a nearby city where K N had already installed the Metricom system, and set it up on rooftops this time. This would allow for a real-life test in an area where there was significant network activity and a large number of transmitters were deployed. The manager balked at this idea, saying, "it has to be tested in a PERMANENT installation."

At the end of our conversation, the only agreement I could secure from this manager was that he would let me talk to some of his "engineers." I do not know if these will be engineers from his company or from Metricom, or if there will in fact be follow-through on this.

What concerns me, however, is that this manager is still operating entirely under the assumption that there will be NO interference with our network. (We don't believe that this is possible if the two systems are on the same band, given the huge amounts of interference we've seen before.) But he has not yet proposed any effective measure to be taken if we DO demonstrate interference in a mutually agreed-upon test. He says that he WILL NOT exchange his equipment for anything that operates in another band, nor will he subsidize OUR move to another band. And he keeps saying, "According to Federal law, we can do whatever we want to."

One of our group's most, er, outspoken members wrote me in e-mail that "K N is just a huge mega-corporation with a monopoly; they don't care and they'll find a way to kick us off the band. They think it's thier [sic] property. Their offer to cooperate on a test is a sucker bet."

I hope he's not right, but I cannot exclude what he says as a possibility. What do we do?

--Brett Glass

55. [Fwd: Re: [SS:2063] Re:Bell Labs scientists shatter limit on fixed]

From: "Donald V. Lemke" <wb9mjn%wb9mjn.ampr.org@uugate.ampr.utah.edu>
Date: Tue, 15 Sep 1998 17:37:07 -0500
To: ss@tapr.org
Message-ID: <35FEEC13.7FF0@uugate.aim.utah.edu>
Rendered body type: text/plain

The first send of this apparently got eaten by the root crash, so here it is again

Donald V. Lemke wrote:
>
> Hi Jake,

>
>   I didn t write the comment u replied too, but i wrote the comment
> he was replying to.
>
>
>
>   The problem with phase shifters is that the signal arriving at any
> element , versus another element in an array from a particular
> direction is not constant in phase over frequency. If the angle is 30
> degrees from the boresite to the right, then the elements to the left
> recieve the wave thru an additional distance of sin(30) times the
> distance between the element, and the furthest right elements. This is a
> fixed distance difference. Distances are constant in delay, not phase,
> versus frequency. If between two elements at a particular frequency, the
> difference needs to be 100 degrees, then at another frequency that
> distance represents a different phase.
>
>   For large array antennas, phase shifting is the only economical
> way to go. Additionally, they have the the capability of being easily
> computer controlled.
>
>   For smaller array antennas with broad bandwidths, time delay
> phasing is practical. Additionally, its possible to have an array
> antenna with a port for every beam direction, and these ports can be
> used simultaneously.
> --

--

73, Don.

AMPRNet : wb9mjn@wb9mjn.ampr.org[44.72.98.19]
Internet: wb9mjn%wb9mjn.ampr.org@uugate.aim.utah.edu
Website: http://www.qth.com/antpanel

56. Spread Spectrum Interference to Narrow Signals

From: Jeff Millar <jeff@wa1hco.mv.com>
Date: Tue, 15 Sep 1998 21:48:00 -0400
To: ss@tapr.org
Message-ID: <199809160141.VAA23208@mercury.mv.net>
Rendered body type: text/plain

Spread spectrum works because of energy - bandwidth duality. If you
increase the spreading bandwidth by 10, then the energy per kHz can drop by
10. A 3 kHz SSB signal at 100 W has 33 W/kHz at the transmitter. If it
spreads to 100 kHz, then the power can drop to 1 W/kHz and achieve the same
level of effectiveness.

Many people assume that spreading reduces the power density to levels that
won't cause interference. However, the amount of dynamic range in the
environment greatly exceeds the amount of spreading. For example, lets
assume we want to avoid interference to stations at 10 km range while
communicating with stations at 1000 km range. Setting aside ground
effects, the 10 km distant station will receive a signal 40 dB stronger
than the distant station. So to be polite, we need to reduce broad band
interference by more than 40 dB to allow our neighbor to also communicate
with stations at 1000 km.

To achieve a 40 dB reduction in W/kHz, we need to spread by a factor of
10,000, the 3 kHz SSB signal must occupy 30 MHz of spectrum. From what I
know of SS systems, this level of performance is just about at the bleeding
edge.

I have some opinions based on this simple analysis:

- SS on the HF bands must avoid the weak signal sections of the band
- SS will inevitably cause interference to your neighbors attempting
moderate signal operations
- Frequency hopping and Direct Sequence modulation techniques don't really
fit ham requirements, we need get out of the 60's and into the 90's.

My suggestions...apologies if people already have it working :-)

SS should use adaptive modulation techniques that measure power required
for each frequency bin and use the minimum power necessary on a per-bin
basis, avoid bins with strong signals, and map out weak signal areas
entirely. The information about signals per bin comes from the receive end

of the link and passes to the transmitting end in a closed loop process.

jeff, wa1hco

57. Doppler Effect .

From: Basuki E Priyanto <priya@students.itb.ac.id>
Date: Tue, 15 Sep 1998 11:10:20 +0000 (GMT)
To: ss@tapr.org
Message-ID: <Pine.BSF.4.02A.9809151104070.1101-100000@students.itb.ac.id>
Rendered body type: text/plain

We've already know if spread spectrum communication use very wide
bandwidth transmission.
I've read in many refference, the advantage of wider bandwidth will be
reduce doppler efect or there is no doppler effect in mobile spread
spectrum comm.

Is there anyone know, the maximum doppler shift accepted for mobile spread
spectrum communication using 2 GHz freq ? and the correlation between
maximum doppler shift and bandwidth used in mobile SS-Comm ?

Thanks.
Basuki E. Priyanto,

58. Re: [SS:2069] Re: Re: SS on HF

From: Jon Bloom <jbloom@mgate.arrl.org>
Date: Tue, 15 Sep 1998 23:29:22 -0400
To: ss@tapr.org
Message-ID: <35FF3092.1DEBA136@arrl.org>
Rendered body type: text/plain

[Posted this earlier but I think the server ate it.]

Robert A. Buaas wrote:
>
> Say that you are the receiver in the SSB QSO, and there is this
> distant FHSS PACTOR system running continuously (what real system
> does this? Even very active BBS's don't run continuously!)--you're
> going to (maybe) loose 1.5 seconds of your QSO at some random
> instant inside each 5-minute window. You can't predict the instant,
> so you can't even be prepared to listen for it. If you're in the
> 2/3 of the country that can't hear the FHSS, or if his signal is
> weaker than your SSB QSO, then even if you do hear it, you didn't
> loose any information. What if your QSO partner is in between
> sylables, so he really isn't transmitting any information at the
> instant the FHSS comes by, even with a blasting signal? That's
> what I mean by "maybe."

Almost any useful system you examine will be okay if you postulate only
one SS station. But what if there are 100 such FHSS transmitters that
the SSB station can hear at a significant signal level -- not an
outrageous number for a popular HF mode when the band is open. How many
seconds of SSB reception does the station lose, and does that constitute
harmful interference?

As far as I'm concerned -- and I know Ed feels the same way -- it would
be great to see SS make its way into HF use. But before that can happen
there has to be a reasonable consideration of the effect on existing
narrowband users. By which I do *not* mean that those users must see no
additional interference from SS, only that such interference should not
be extreme or entirely disruptive of narrowband communications. Such a
reasonable consideration has to be based on a reasonable number (not 1)
of SS transmitters in simultaneous operation.

> nice for someone else to do a similar study. What is important is,
> if there's no signal on a channel, then the FHSS isn't interfering
> by hopping there. That's roughly 90% of the time.

That's not what's important to the station being interfered with. What's
important is that if the FHSS stations are hopping across the entire
band, and if the narrowband station is experiencing troublesonme
interference from them, there is no recourse; the narrowband station is
off the air, period. It doesn't matter how many narrowband channels are
unoccupied at any instant -- they are all equally unusable by the
narrowband station. Knowing that only a few stations are experiencing
that degree of interference is small comfort to those who are
experiencing it!

I still don't see how a significant amount of SS activity can share

spectrum with narrowband signals. One or two SS stations, yes. But if SS
is ever to be anything more than a curiosity we need to figure out how
to accommodate significant numbers of SS stations without precluding
narrowband activity. Ay UHF and above we have more flexibility; we can
segregate SS and narrowband operations by frequency. At HF that's
problematic.

73, Jon
--
Jon Bloom, KE3Z
jbloom@arrl.org
Electronic Publications Manager
(CD-ROM publications, software products and Web site)

59. [SS:10] Help! Small community network trying to deal with Big Guys

From: Brian Bartholomew <bb@wv.com>
Date: Wed, 16 Sep 1998 01:55:53 -0400
To: ss@tapr.org
Message-ID: <199809160555.BAA04823@battleship>
Rendered body type: text/plain

> What do we do?

You've uncovered plausible evidence that your opponent will do or say
anything to advance their agenda. Now they are leading you along to
distract you while they catch up. To win you must fight a battle
using political rules. So fight one.

League for Programming Freedom (LPF) ftp://ftp.gnu.org/pub/lpf/patents.text
----
Brian Bartholomew - bb@wv.com - www.wv.com - Working Version, Cambridge, MA

60. RE: 14] Re: Re: SS on HF

From: "Hare, Ed, W1RFI" <ehare@arrl.org>
Date: Wed, 16 Sep 1998 08:11:04 -0400
To: ss@tapr.org
Message-ID: <E12EC3E9FA06D211817D00805FC743CC0B4450@MAIL_SERV>
Rendered body type: text/plain

Jon Bloom wrote:

>As far as I'm concerned -- and I know Ed feels the same way -- it would
>be great to see SS make its way into HF use. But before that can happen
>there has to be a reasonable consideration of the effect on existing
>narrowband users. By which I do *not* mean that those users must see no
>additional interference from SS, only that such interference should not
>be extreme or entirely disruptive of narrowband communications. Such a
>reasonable consideration has to be based on a reasonable number (not 1)
>of SS transmitters in simultaneous operation.

I will take this a bit farther than Jon. It is important that we (we
meaning the amateur community) accurately assess the potential for SS
signals to interfere with narrowband users. That interference potential
should be weighed vis a vis the expected benefits of SS (also accurately
assesses) and the best balance between all factors reached. I expect
that the balance will probably have to include some level of
interference to narrowband users. I think the key words are "extreme"
and "disruptive."

>I still don't see how a significant amount of SS activity can share
>spectrum with narrowband signals. One or two SS stations, yes. But if
SS
>is ever to be anything more than a curiosity we need to figure out how
>to accommodate significant numbers of SS stations without precluding
>narrowband activity. Ay UHF and above we have more flexibility; we can
>segregate SS and narrowband operations by frequency. At HF that's
>problematic.

Of course, Jon's "not seeing" does not necessarily mean that such
sharing cannot take place. He, like I, and hopefully all of us, want to
see the necessary engineering and studied done, and see system designs
(and rules, as necessary and appropriate) that will achieve the balance
point between SS and other users where they will share the same bands.

At HF, it may indeed be problematic, but that does not translate to
impossible. Looking at 80 and 10 meters, for examples, I can certainly
see room where SS (even DSSS) could operate without being completely
disruptive (although probably not spread across the entire band . . .).

IMHO, if we are to have a viable SS operation on HF and useful
experimentation, such room must be made. After all, when the digital
modes first started appearing on the "CW" bands, I can recall some
discussion about how disruptive it was, and how it was displacing CW
users, etc.

IMHO, it is important that those of us who would like to see SS become a
significant part of the Amateur Radio Service (and I do) analyze and
discuss these issues. As more SS allocations, and fewer restrictions,
are proposed, don't think for a minute that others will not raise these
issues as part of the rulemaking process. I can almost guarantee that
if SS were proposed to be legal across the weak-signal part of the VHF
and up bands, the weak-signal folks can do the same analysis that I did,
and WOULD present it in their context to the FCC. Yes, asking these
questions can be painful, but they are not obstructive when raised
here; they are realistic, trying to have answers to the inevitable
questions ready before they are raised in a context that WOULD be
obstructive - as reply comments to the NPRM that someday will seek to
expand the horizons of SS activity.

73, Ed, W1RFI
ARRL Lab

61. More, SS on HF...

From: "Robert A. Buaas" <buaas@wireless.net>
Date: Tue, 15 Sep 1998 23:26:09 -0700 (PDT)
To: ss@tapr.org
Message-ID: <199809160626.XAA15393@uv.wireless.net>
Rendered body type: text/plain

Hi Jon--

Glad you're joining the conversation...

If memory serves me, quite some time ago, all there was was AM.
In fact there were a 100 AM stations when the band was open. But
one day, there was 1 SSB QSO, and only 99 on AM. In a few days,
there were 2 SSB QSO heard, and 98 AM. A bit later, there was
5 SSB/ 95 AM, then 10 SSB/ 90 AM... until there were 99 SSB and
a lone AM.... And now, it's REALLY HARD to find AM on the band.
Anywhere.

Back then, it took a couple of weeks to build an SSB rig. It's
only a year's worth of work today to build a SS rig. That's why
you haven't heard one yet. One that you recognize, that is.
And it will be a while before there are enough to stir up
any significant frequency of collisions with occupied fixed-frequency
QSOs that one could call it "interference."

One possibility for a "smart radio" is, while it's hopping, it could
figure out where the fixed-freq action is, and remove it from the
hopping pattern it's using, letting the other end know in the process.
The other day when I was "listening" to 15M during the band opening,
I "heard" the usual 10% spectral utilization--we're a long way
from any problems...

Have you forgotten: history has a way of repeating itself...

By the way, what was your EXPERIENCE of the interference generator
I described. You want to know what it would be like for 10 FHSS
stations transmitting simultaneously, well, program it up...

best regards/bob K6KGS

62. Re: [SS:15] Help! Small community network trying to deal with Big Guys

From: Brett Glass <brett@lariat.org>
Date: Wed, 16 Sep 1998 23:46:22 -0600
To: ss@tapr.org
Message-ID: <199809170547.XAA09427@lariat.lariat.org>
Rendered body type: text/plain

How would you suggest that one do this? What sort of "political rules"
pertain to this sort of battle?

--Brett Glass

At 09:26 PM 9/16/98 -0500, Brian Bartholomew wrote:

>> What do we do?

>
>You've uncovered plausible evidence that your opponent will do or say
>anything to advance their agenda. Now they are leading you along to
>distract you while they catch up. To win you must fight a battle
>using political rules. So fight one.
>
>
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>

63. Re: [SS:14] Re: Re: SS on HF

From: Jeff King <jeff@aerodata.net>
Date: Thu, 17 Sep 1998 23:41:03 -0400
To: ss@tapr.org
Message-ID: <3.0.5.32.19980917234103.03564510@aerodata.net>
Rendered body type: text/plain

I wonder if its to far of a stretch to replace references to
spread spectrum with "CW" and SSB/Narrowband users with "spark
gap"? While the technical issues are different, I'm willing to
bet the same emotional issues/arguments were discussed back
in the amateur rags in the 1915-1920 era.

Some things never change...

-Jeff

At 10:41 PM 9/15/98 -0500, Jon Bloom wrote:
>
>As far as I'm concerned -- and I know Ed feels the same way -- it would
>be great to see SS make its way into HF use. But before that can happen
>there has to be a reasonable consideration of the effect on existing
>narrowband users. By which I do *not* mean that those users must see no
>additional interference from SS, only that such interference should not
>be extreme or entirely disruptive of narrowband communications. Such a
>reasonable consideration has to be based on a reasonable number (not 1)
>of SS transmitters in simultaneous operation.

| Jeff King   Aero Data Systems |
| jeff@mich.com P.O. Box 510895 |
| (248)471-1787 Livonia, MI 48151 |
|F(248)471-0279 United States |
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64. [SS:18] Re: Help! Small community network trying to deal with

From: Brian Bartholomew <bb@wv.com>
Date: Fri, 18 Sep 1998 01:25:31 -0400
To: ss@tapr.org
Message-ID: <199809180525.BAA05953@battleship>
Rendered body type: text/plain

> How would you suggest that one do this?

I am not a political expert, and I do not play one on the net. But
for starters, I'd stop talking to the K N Energy manager. All that
does is divulge your lobbying strategy to him. Meet with the city
council, or whoever will be making the actual approval decision. This
works better if the city council will actually be spending their own
money when they commit to a plan. Dust off your best salesman, and
have him rewrite the LARIAT mission statement plus the business impact
sections of your webbed report into a presentation. You want to show
the city council why Laramie will be a better place if they go with
your plan. It is not immoral to use sales techniques like a little
pizzaz and flash, and some optimistic predictions; you will be
competing against others who do. Assume they don't care if LARIAT or
their small handful of users are hurt; the city council's job is to
optimize the environment for the majority of businesses in the whole
city. If KN tries to derail you by claiming you haven't done your
engineering homework, fight back by assuming the benefit of the doubt
is on your side. Assume KN will invent arbitrary claims without basis
in fact to counter your well-researched claims. Do not be baited into
a time-delaying contest of disproving their claims. Disproving their
false statements with solid engineering experiments is not the goal.
The goal is to convince the city council that your plan is to be

preferred over KN's.

As always, the only thing anybody cares about is money. If your plan
makes better financial sense (higher bitrate + more users + less price),
you have a shot at winning. But if LARIAT only intends to serve 100
users and KN will serve 10,000, then I would probably vote for KN
myself.

> What sort of "political rules" pertain to this sort of battle?

Machiavelli.

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65. [SS:18] Re: Help! Small community network trying to deal with

From: Brian Bartholomew <bb@wv.com>
Date: Fri, 18 Sep 1998 02:29:30 -0400
To: ss@tapr.org
Message-ID: <199809180629.CAA06004@battleship>
Rendered body type: text/plain

> It is not immoral to use sales techniques like a little pizzaz and
> flash

Such as bringing in a laptop with your radio modem, and showing how
fast web pages come up. Then point out how the city commissioners
could buy this very same service for home and get it delivered by
Tuesday for the low, low, low price of whatever.

If you're feeling gutsy you could challenge KN to meet you with a
side-by-side demo, where of course your system is much faster.

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Brian Bartholomew - bb@wv.com - www.wv.com - Working Version, Cambridge, MA

66. Re: [SS:21] Re: Help! Small community network trying to deal with

From: Brett Glass <brett@lariat.org>
Date: Fri, 18 Sep 1998 00:55:55 -0600
To: ss@tapr.org
Message-ID: <199809180658.AAA19132@lariat.lariat.org>
Rendered body type: text/plain

Our system doesn't use laptop radio modems. It uses fixed nodes on rooftops.

--Brett

At 01:31 AM 9/18/98 -0500, Brian Bartholomew wrote:

>> It is not immoral to use sales techniques like a little pizzaz and
>> flash
>
>Such as bringing in a laptop with your radio modem, and showing how
>fast web pages come up. Then point out how the city commissioners
>could buy this very same service for home and get it delivered by
>Tuesday for the low, low, low price of whatever.
>
>If you're feeling gutsy you could challenge KN to meet you with a
>side-by-side demo, where of course your system is much faster.
>
>
>League for Programming Freedom (LPF) ftp://ftp.gnu.org/pub/lpf/patents.text
>---

>Brian Bartholomew - bb@wv.com - www.wv.com - Working Version, Cambridge, MA
>

67. Re: [SS:20] Re: Help! Small community network trying to deal with

From: Steve Stroh N8GNJ <n8gnj@tapr.org>
Date: Fri, 18 Sep 1998 00:56:15 -0700
To: ss@tapr.org
Message-ID: <199809180752.CAA15891@rgate.ricochet.net>
Rendered body type: text/plain

This subject isn't exactly germane to the stated purpose of SS, but I'll leave that chore to the ListAdmin of SS.

I'm not a lawyer, I'm not speaking on behalf on any organization or person. I'm very clearly labelling this as personal opinion.

The bottom line is that both Ricochet and WaveLAN are Part 15 devices, and both must accept interference from other Part 15 devices and licensed services in the same band. I'm ignoring, for the moment, Brett's contention that Ricochet isn't compliant with Part 15 rules. Until that is proven to the satisfaction of the FCC and it makes a ruling, deployment of Ricochet is legal and as I understand it, cannot be pre-empted on RF technical issues by local governments. When that's been attempted, the FCC rightfully has claimed preemption in such matters.

What decides if you got your money's worth is if the device continues to function when interference inevitably comes- which could be wireless patio speakers, a television "extender" (how'd you like a handful of those each running 1W occupying 6 MHz each), a swarm of cordless phones, Amateur Radio operators running wideband data at 155 Mbps or something at 25W.

Will you be taking political action to have THOSE devices "disallowed" by local fiat in Laramie because they could potentially interfere with LARIAT?

It seems to me that your only course of action at this point is to try to get your equipment vendor (Lucent) to make the case with the FCC that a Ricochet System isn't compliant with Part 15, and because of that a Ricochet System causes other Part 15 devices that ARE compliant, not to function. If your vendor won't stand behind their equipment not functioning, then you have few options (and if they don't take action, then it seems to me that they're open to market criticism and lost sales).

Anything short of the vendor getting involved seems to be a political solution to a techical problem, and the subscribers to this list know only TOO well how ineffective THAT approach is.

Steve Stroh N8GNJ

At 00:28 9/18/98 -0500, Brett Glass <brett@lariat.org> wrote:

> How would you suggest that one do this?

68. Re: SS on HF

From: "Gwyn Reedy" <gwyn@paccomm.com>
Date: Fri, 18 Sep 1998 06:42:32 -0400
To: <ss@tapr.org>
Message-ID: <01bde2f1$0a8c3b40$c04f460c@mgr>
Rendered body type: text/plain

Jeff,

I disagree with you because times have changed. I highly doubt that there was organized discussion about CW - people just acted individually as they saw best. (Or maybe that is just my romantic view of the past). I prefer the way I imagine it was to the way it is now....

I don't mean to enter this discussion. I have no technical opinion to offer. It is just my observation that the ground rules of the game seem to be that there can be little or no interference to existing modes. What that means to me is a fear of or reluctance to change. Jon and other enlightened ARRL folk look forward to new technology but are struggling to use it without impacting existing modes. That is partly because they are 'good guys' and partly a job requirement. It is just a sign of the times. When SSB came along there were no environmental impact statements and much more of an individualistic attitude compared to the group awareness which prevails now.

Guess I'm just getting old. It is natural to think things were better in one's youth. There are no more frontiers open to the average person and (unfortunately) no frontier spirit left.

I hold little hope for a planned, coordinated introduction of any new technology in amateur radio (in the short term). Too many vested interests that resist change. It is noble that discussions of the 'right' way to do SS are held, but in my opinion 'permission' will never be obtained. It will either be done via the back door, or it won't be done at all. I don't know which is better.

Gwyn Reedy

W1BEL

-----Original Message-----
From: Jeff King <jeff@aerodata.net>
To: ss@tapr.org <ss@tapr.org>
Date: Friday, September 18, 1998 12:20 AM
Subject: [SS:19] Re: Re: SS on HF

>I wonder if its to far of a stretch to replace references to
>spread spectrum with "CW" and SSB/Narrowband users with "spark
>gap"? While the technical issues are different, I'm willing to
>bet the same emotional issues/arguments were discussed back
>in the amateur rags in the 1915-1920 era.
>
>Some things never change...
>
>-Jeff
>
>
>
>At 10:41 PM 9/15/98 -0500, Jon Bloom wrote:
>>
>>As far as I'm concerned -- and I know Ed feels the same way -- it would
>>be great to see SS make its way into HF use. But before that can happen
>>there has to be a reasonable consideration of the effect on existing
>>narrowband users. By which I do *not* mean that those users must see no
>>additional interference from SS, only that such interference should not
>>be extreme or entirely disruptive of narrowband communications. Such a
>>reasonable consideration has to be based on a reasonable number (not 1)
>>of SS transmitters in simultaneous operation.
>
>-----------------------------------
>| Jeff King   Aero Data Systems |
>| jeff@mich.com P.O. Box 510895 |
>| (248)471-1787 Livonia, MI 48151 |
>|F(248)471-0279 United States |
>-----------------------------------
>

69. RE: 19] Re: Re: SS on HF

From: "Hare, Ed, W1RFI" <ehare@arrl.org>
Date: Fri, 18 Sep 1998 08:54:55 -0400
To: ss@tapr.org
Message-ID: <E12EC3E9FA06D211817D00805FC743CC0B4AE1@MAIL_SERV>
Rendered body type: text/plain

>I wonder if its to far of a stretch to replace references to
>spread spectrum with "CW" and SSB/Narrowband users with "spark
>gap"? While the technical issues are different, I'm willing to
>bet the same emotional issues/arguments were discussed back
i>n the amateur rags in the 1915-1920 era.

I am sure those conversations took place, and they were probably just as
"enthusiastic" as some of the ones going on today. :-)

There are some differences, however. For the most part, the broadband
nature of spark, with its energy distributed across spectrum, was the
interferer, with the new mode being the interferee.

The issue was finally decided on two issues. One was communications
effectiveness, with narrowband offering such significant advantages over
spark. It was also decided on the basis of incompatibility - spark was
deemed so incompatible with narrowband use that its use was outright
banned.

>Some things never change...

I agree, but if you are suggesting that SS vs narrowband should be
decided in the same way that it was decided in the teens, the solution
would be to ban SS or narrowband on various bands or band segments,
isolating each mode from mutual problems. I have seen some on the
narrowband side propose this as a solution; why, that is part of what
this discussion is all about anyway. :-)

73, Ed, W1RFI
ARRL Lab

I will add a note about my participation on this reflector. I am

following the normal USENET conventions in that my participation is
personal. I do not speak for any ARRL policy outside the activities of
the ARRL Lab. I will add that I am personally interested in SS and want
to explore what I can do to learn more about it and perhaps contribute
some to the processes at hand. Of course, like anyone who works for
anyone, one should expect that I will not act in ways that would
undermine the policies and activities of my employer. For that reason,
I add my job title to my posts to allow people to decide for themselves
to what extent my employment at ARRL HQ might influence what I have to
say. In the "professional" arena, the line between personal and
professional, especially in the ham-radio field, is often blurred. If
anyone ever has questions about the extent to which my personal views
might affect ARRL, or the other way around, please ask. Thanks. - Ed

At 10:41 PM 9/15/98 -0500, Jon Bloom wrote:
>
>As far as I'm concerned -- and I know Ed feels the same way -- it would
>be great to see SS make its way into HF use. But before that can happen
>there has to be a reasonable consideration of the effect on existing
>narrowband users. By which I do *not* mean that those users must see no
>additional interference from SS, only that such interference should not
>be extreme or entirely disruptive of narrowband communications. Such a
>reasonable consideration has to be based on a reasonable number (not 1)
>of SS transmitters in simultaneous operation.

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| (248)471-1787 Livonia, MI 48151 |
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----

70. Re: [SS:23] Re: Help! Small community network trying to deal

From: Brett Glass <brett@lariat.org>
Date: Fri, 18 Sep 1998 08:38:31 -0600
To: ss@tapr.org
Message-ID: <199809181439.IAA21104@lariat.lariat.org>
Rendered body type: text/plain

At 02:56 AM 9/18/98 -0500, Steve Stroh N8GNJ wrote:

>What decides if you got your money's worth is if the device continues to
>function when interference inevitably comes- which could be wireless patio
>speakers, a television "extender" (how'd you like a handful of those each
>running 1W occupying 6 MHz each), a swarm of cordless phones, Amateur Radio
>operators running wideband data at 155 Mbps or something at 25W.
>
>Will you be taking political action to have THOSE devices "disallowed" by
>local fiat in Laramie because they could potentially interfere with LARIAT?

Steve, I think you are being disingenuous here. None of these interferes
with LARIAT or is ever likely to do so. It is saturation of the band with
hundreds of outdoor transmitters so arranged as to "take over" the spectrum
that's the problem. They coordinate frequency hopping sequences to produce
wideband interference, and power levels to drown out other units.

>It seems to me that your only course of action at this point is to try to
>get your equipment vendor (Lucent) to make the case with the FCC that a
>Ricochet System isn't compliant with Part 15, and because of that a
>Ricochet System causes other Part 15 devices that ARE compliant, not to
>function. If your vendor won't stand behind their equipment not
>functioning, then you have few options (and if they don't take action, then
>it seems to me that they're open to market criticism and lost sales).

Lucent has already stated its desire that such devices be required to conform
to the IEEE 802.11 protocol. The FCC has not taken action on this yet, to my
knowledge.

Steve, it appears that you're recommending a futile approach. Are you really
that much of a "Metricom uber alles" fan that you're willing to be hostile
to our community's well-being? Your remarks so far certainly make it sound
that
way.

--Brett

71. Re: [SS:24] Re: SS on HF

From: Philippe Fuchs <fuchs_@evc.net>
Date: Fri, 18 Sep 1998 16:57:29 +0200
To: ss@tapr.org
Message-ID: <360274D9.948DE4F3@evc.net>
Rendered body type: text/plain

I'm monitoring this list for a few months now, and I felt I had to give my own opinion on SS and HF.

First, let us recal why SS was designed for, and what the main advantages are to use this technique. SS is inted to:

1) Make efficient use of bandwidth, mainly for high data speeds.
2) Alow sharing the same bandwidth with other users. This assumes other users also using SS
3) Be less sensitive to single/narrow band interferences. What "less sensitive" really means is that the degradations in signal quality will not be as important as with conventionnal FSK/PSK systems.
4) Multipath resolving possibilities, and even combining for better signal quality (see RAKE receiver)
5) Encryption and transmission hiding with a signal level wich is under the noise floor (military applications)
etc
Taking these points, but looking at them with a HF-amateur point of view:

1) Using SS would mean increased data rate i.e. largre bandwidth (if not, why don't we stay with the slow FSK). At least 50 to 100 kHz whould be required to provide a normal quality service, where SS would show its qualities. This leaves us the choise on the 3.5, (14), 21 and 28 MHz bands, assuming co-existance with narrowband users.

2) and 3) This seems to be the main worry in the last messages. The problem was well defined: SS WILL cause interferences to SSB/CW users if using they use the same frequencies. But remember that HF goal is DX contacts, using the lowest power necessary. At least, this is my point of view. What then shall we do with DX QRP stations, when we have S7 noise due to SS? Most wealthy hams would say "buy him a Kilowatt"! The point is SS should not interfere with existing modulation types, wich most of us enjoy, by respect.
4) and 5) are less relevent to this discussion.

My conclusion:
SS was not intended to be/ is not an interresting mode for HF as it would probably require band segments, as it is already the case between SSB, CW and FSK. The benefits of SS are more convincing in VHF/UHF, where local high speed links would be welcomed, due to low cost and avalability of parts.
In HF, hams may use or improve techniques such as adaptive filters with FSK/PSK techniques to improve quality/speed. This implies more use of DSP.

Note that I'm not against SS at all, since I engineer SS systems for mobile phones in Europe! But I can simply not see the reasons or the benefits SS would bring on HF, considering HF is for long distance contacts and we have so much unused bands up there in the GigaHertz.

I'm open to all comments, corrections and suggestions.

Philippe Fuchs
F8CND
fuchs_@evc.net
(Anti-spam protection. Remove '_' for correct address)
---

72. Re: [SS:24] Re: SS on HF

From: Jeff King <jeff@aerodata.net>
Date: Fri, 18 Sep 1998 21:41:55 -0400
To: ss@tapr.org
Message-ID: <3.0.5.32.19980918214155.00977760@aerodata.net>
Rendered body type: text/plain

At 06:20 AM 9/18/98 -0500, Gwyn Reedy wrote:
>Jeff,
>
>I disagree with you because times have changed.

What exactly do you disagree with? Reading your post it seems

you mostly agree with my (unwritten) thoughts.... fear of change.

>I highly doubt that there
>was organized discussion about CW - people just acted individually as they
>saw best. (Or maybe that is just my romantic view of the past). I prefer the
>way I imagine it was to the way it is now....

People really don't change that much...

>
>I don't mean to enter this discussion. I have no technical opinion to offer.
>It is just my observation that the ground rules of the game seem to be that
>there can be little or no interference to existing modes. What that means to
>me is a fear of or reluctance to change.

Right.

>Guess I'm just getting old. It is natural to think things were better in
>one's youth. There are no more frontiers open to the average person and
>(unfortunately) no frontier spirit left.

I hear what you are saying, and often any organized involvement with
amateurs leads to this. But just go out and do you own thing and make
your own frontiers.... don't let the collective amateur radio curse
drag you down.

>
>I hold little hope for a planned, coordinated introduction of any new
>technology in amateur radio (in the short term). Too many vested interests
>that resist change. It is noble that discussions of the 'right' way to do SS
>are held, but in my opinion 'permission' will never be obtained. It will
>either be done via the back door, or it won't be done at all. I don't know
>which is better.

It's been my observation its easier to say "opps, I'm sorry" then ask
permission.

>
>Gwyn Reedy
>W1BEL

Jeff King
wb8wka

73. Re: [SS:27] Re: SS on HF

From: Steve Sampson <ssampson@usa-site.net>
Date: Fri, 18 Sep 1998 20:50:45 -0500 (CDT)
To: ss@tapr.org
Message-ID: <199809190150.UAA00292@access.usa-site.net>
Rendered body type: text/plain

Philippe Fuchs writes:

[snip]

> Note that I'm not against SS at all, since I engineer SS systems for
> mobile phones in Europe! But I can simply not see the reasons or the
> benefits SS would bring on HF, considering HF is for long distance
> contacts and we have so much unused bands up there in the GigaHertz.
>
> I'm open to all comments, corrections and suggestions.

Spectrum:

Could the argument be changed around, that since there is so much
spectrum "in the GigaHertz" that CW and SSB be moved there?

Radio Relay:

1) How many UHF stations does it take to cross the Continental US?
2) How many HF stations?
3) Which would be more likely achieved.

Experiment:

I think spectrum needs to be allocated, either new spectrum (go to WARC),
or current spectrum. You can debate with numbers and theory all you want,
but until you have two prototypes testing the theory, it's all

hypothetical. How many UPS trucks are using 220 MHz with their fancy
new mode?

Steve

74. Re: [SS:25] RE: 19] Re: Re: SS on HF

From: Jeff King <jeff@aerodata.net>
Date: Fri, 18 Sep 1998 22:01:19 -0400
To: ss@tapr.org
Message-ID: <3.0.5.32.19980918220119.03680240@aerodata.net>
Rendered body type: text/plain

Hi Ed:

I think you see my point, I re-wrote your
paragraph possibly as a ham reflecting back to
these debates might write in 2020. First your
original comment:

At 07:59 AM 9/18/98 -0500, Hare, Ed, W1RFI wrote:
(regarding spark vs cw (wide vs. narrow)

>The issue was finally decided on two issues. One was communications
>effectiveness, with narrowband offering such significant advantages over
>spark. It was also decided on the basis of incompatibility - spark was
>deemed so incompatible with narrowband use that its use was outright
>banned.

Looking at bit into the future....

At 07:59 AM 1/1/2020 -0500, Ham, Joe, W8ABC wrote:
(regarding SS vs narrowband (wide vs. narrow)

>The issue was finally decided on two issues. One was communications
>effectiveness, with spread spectrum offering such significant advantages over
>narrowband. It was also decided on the basis of incompatibility -
narrowband was
>deemed so incompatible with spread spectrum use that its use was outright
>banned.

>
>>Some things never change...
>
>I agree, but if you are suggesting that SS vs narrowband should be
>decided in the same way that it was decided in the teens, the solution
>would be to ban SS or narrowband on various bands or band segments,
>isolating each mode from mutual problems. I have seen some on the
>narrowband side propose this as a solution; why, that is part of what
>this discussion is all about anyway. :-)

Its a start... narrowband could be relegated to a small portion at the
edge of the bands giving spread spectrum users a larger contiguous portion
of the band. This would allow the advantages of spread spectrum to be
realized. Eventually the whole concept of "band" could be disposed
of. At this point narrowband use could be outlawed much as spark was.

I really don't have much more to offer, so thanks for replying.

73

Jeff wb8wka

| Jeff King   Aero Data Systems |
| jeff@mich.com P.O. Box 510895 |
| (248)471-1787 Livonia, MI 48151 |
|F(248)471-0279 United States |
----

75. Re: [SS:29] Re: SS on HF

From: Gerry Creager <n5jxs@tamu.edu>
Date: Sat, 19 Sep 1998 13:35:34 -0500
To: ss@tapr.org
Message-ID: <3603F976.235B@tamu.edu>
Rendered body type: text/plain

Steve Sampson wrote:
>
> Spectrum:
>
> Could the argument be changed around, that since there is so much
> spectrum "in the GigaHertz" that CW and SSB be moved there?

No. Consider for a moment, the case of the Gulf Coast. We use a *lot*
of HF communication this time of year for hurricaine communications.
Wire antennas are easy to string after the winds calm a bit and easy to
move to the new command post. The SS assets do not yet exist to
supplant this activity. Further, NBFM at VHF and UHF are not sufficient
to cover the work done on HF. But they have their uses.

Nope, we're not there yet. We need to have a product that will do
everything the uses need (*NOTE*: _need_ rather than want) before we try
to relegate established practices to less than desirable bands.

> Radio Relay:
>
> 1) How many UHF stations does it take to cross the Continental US?
> 2) How many HF stations?
> 3) Which would be more likely achieved.

Inconsequential: If you distrupt current, conventional users even with a
better product the initial view will be negative. If your better idea
is not actually realized in volume and then you claim spectrum for it,
displacing other, existing technology, there'll be anarchy.

> Experiment:
>
> I think spectrum needs to be allocated, either new spectrum (go to WARC),
> or current spectrum. You can debate with numbers and theory all you want,
> but until you have two prototypes testing the theory, it's all
> hypothetical. How many UPS trucks are using 220 MHz with their fancy
> new mode?

I strongly support this thought train. We would benefit from the new
experimental spectrum. Who wants to write it up? I may be able to get
some support from soem federal assets on this...

73, gerry

76. Re: [SS:31] Re: SS on HF

From: "Steve Sampson" <ssampson@usa-site.net>
Date: Sat, 19 Sep 1998 15:51:10 -0500
To: <ss@tapr.org>
Message-ID: <000401bde40f$3ba5b5c0$87228cd1@dodge.usa-site.net>
Rendered body type: text/plain

Listening for the military stuff I used to be part of 10 years ago, I
find that almost all of it is gone. Since we were using more and
more satellite gear, and JTIDS, I think spectrum is available, and
if we don't apply for it, the Church will. I'd rather see more
HF for Hams, then HF for churches. They've already taken over
the AM broadcast band. We may be better off going to the
Southern Baptists for spectrum, rather than the ARRL??

The other option is to take over the Novice bands, but keep the
power limit. Since there will be no more Novices (I hope) there
is no more need for the CW allocation. There's sufficient CW
spectrum on HF. 15 meters and 21.1 to 21.2 is a good
candidate. The 50 kHz on 40 meters is another, and 3.5 to
3.6 MHz on 80 is another. 10 meters is so unused, I mostly
hear CB radio ops going on locally, as there is no Ham
activity.

I think HF is one of those areas where intelligent hoppers
can be deployed. A good application, would be internet
or VHF/UHF connections, where radios can use band activity
from all over the US to map frequencies from. My radio could
take the data from another radio in town over UHF or the
internet, to determine the next 10 hopping frequencies, or
a code that selects the next band to hop to. Something
that can't be done locally, as the mapping receiver would
be overpowered. Another idea is a common channel on HF
using FSK to distribute hopping data. Very low baud rates
needed.

I don't think each radio must operate as a single
entity, but with technology today, could work in a
LAN or WAN type network.

We can't do anything if the Church takes over, or 10
moonbounce operators control the HF spectrum.

Time to move on and clean up the rules. We're not
going to be able to do anything unless they are modified.
The STA route is a dead end. People spend more time
shuffling paper than burning solder, or writing code.

Steve

77. Re: [SS:26] Re: Help! Small community network trying to deal

From: "Frederick M. Spinner" <fspinner@hotmail.com>
Date: Sun, 20 Sep 1998 17:37:12 GMT
To: ss@tapr.org
Message-ID: <19980920173712.16635.qmail@hotmail.com>
Rendered body type: text/plain

Actually I do feel sorry for your organization, but he has a valid
point- Part 15 devices legally get no protection from interference from
other devices, and must accept interference from other devices.

LARIAT was aware of this in the past, and decided to go ahead with their
network anyway. Maybe the real problem is that LARIAT should have gone
with licensed spectrum in the past. There is a definate implication
there that both organizations are at fault. There was a risk with going
with the ISM band equipment. So, if you guys get QRMed off the band,
you knew this was a possibility at deployment.

So, I can see this issue with both points. I think the FCC wasn't too
smart on letting pole top mounted antennas still fall under Part 15...
I see definate bad systems engineering in both camps...

Fred KA9VAW

>Date: Fri, 18 Sep 1998 09:39:39 -0500 (CDT)
>Reply-To: ss@tapr.org
>From: Brett Glass <brett@lariat.org>
>To: ss@tapr.org
>Subject: [SS:26] Re: Help! Small community network trying to deal
>
>At 02:56 AM 9/18/98 -0500, Steve Stroh N8GNJ wrote:
>
>>What decides if you got your money's worth is if the device continues
to
>>function when interference inevitably comes- which could be wireless
patio
>>speakers, a television "extender" (how'd you like a handful of those
each
>>running 1W occupying 6 MHz each), a swarm of cordless phones, Amateur
Radio
>>operators running wideband data at 155 Mbps or something at 25W.
>>
>>Will you be taking political action to have THOSE devices "disallowed"
by
>>local fiat in Laramie because they could potentially interfere with
LARIAT?
>
>Steve, I think you are being disingenuous here. None of these
interferes
>with LARIAT or is ever likely to do so. It is saturation of the band
with
>hundreds of outdoor transmitters so arranged as to "take over" the
spectrum
>that's the problem. They coordinate frequency hopping sequences to
produce
>wideband interference, and power levels to drown out other units.
>
>>It seems to me that your only course of action at this point is to try
to
>>get your equipment vendor (Lucent) to make the case with the FCC that
a
>>Ricochet System isn't compliant with Part 15, and because of that a
>>Ricochet System causes other Part 15 devices that ARE compliant, not
to

>>function. If your vendor won't stand behind their equipment not
>>functioning, then you have few options (and if they don't take action,
then
>>it seems to me that they're open to market criticism and lost sales).
>
>Lucent has already stated its desire that such devices be required to
conform
>to the IEEE 802.11 protocol. The FCC has not taken action on this yet,
to my
>knowledge.
>
>Steve, it appears that you're recommending a futile approach. Are you
really
>that much of a "Metricom uber alles" fan that you're willing to be
hostile
>to our community's well-being? Your remarks so far certainly make it
sound
>that
>way.
>
>--Brett
>
>

_____
Get Your Private, Free Email at http://www.hotmail.com

78. Re: [SS:33] Re: Help! Small community network trying to deal

From: Brett Glass <brett@lariat.org>
Date: Sun, 20 Sep 1998 12:17:18 -0600
To: ss@tapr.org
Message-ID: <199809201819.MAA10288@lariat.lariat.org>
Rendered body type: text/plain

At 12:39 PM 9/20/98 -0500, Frederick M. Spinner wrote:

>Actually I do feel sorry for your organization, but he has a valid
>point- Part 15 devices legally get no protection from interference from
>other devices, and must accept interference from other devices.

"Must accept" as in "the equipment will not blow up." There is nothing
that says the OWNER must accept the interference.

>LARIAT was aware of this in the past, and decided to go ahead with their
>network anyway. Maybe the real problem is that LARIAT should have gone
>with licensed spectrum in the past.

We don't monopolize the band. Metricom's Ricochet system is designed to
do so, with hundreds of radios coordinating to blot out all other
Part 15 users.

>There is a definate implication
>there that both organizations are at fault. There was a risk with going
>with the ISM band equipment. So, if you guys get QRMed off the band,
>you knew this was a possibility at deployment.

We did not anticipate that anyone would mount a strategy so directly aimed
at blowing everyone else off the band. We were shocked when we found out
about the way in which Metricom's equipment works. If it's legal, it
certainly should not be. We are preparing to enter a request for expedited
rulemaking, if we can find someone to help us with the legalities.

>So, I can see this issue with both points. I think the FCC wasn't too
>smart on letting pole top mounted antennas still fall under Part 15...

It goes farther than that. No one should be allowed to monopolize the band
by deploying hundreds of transmitters that coordinate to prevent others
froom using it.

>I see definate bad systems engineering in both camps...

The WaveLAN equipment is designed very well, and has sufficient process gain
to overcome quite a lot of interference (See our paper at
http://www.lariat.org/metricom.html). No other system would cause QRM that
our current engineering design could not overcome. The Metricom system is a
pathological case, in that it does not conform to IEEE 802.11 and acts
aggressively to drown out all others.

This is why we are preparing to propose to the FCC that the aggregate field strength of the transmitters in a coordinated system such as Metricom's be limited to that of a 1 watt ERP omnidirectional transmitter. If there's more, the transmitter power must be scaled back. We will also propose a maximum transmitter density to prevent saturation of an area in which another system is operating.

--Brett Glass

79. Additional comment

From: Brett Glass <brett@lariat.org>
Date: Sun, 20 Sep 1998 12:28:40 -0600
To: ss@tapr.org
Message-ID: <199809201830.MAA10342@lariat.lariat.org>
Rendered body type: text/plain

At 12:39 PM 9/20/98 -0500, Frederick M. Spinner wrote:

>LARIAT was aware of this in the past,

LARIAT was aware that there would be (and are!) other users of the band. We've lived with them just fine. We were not aware that an out-of-state mega-corporation would attempt to steamroll us without warning.

>and decided to go ahead with their
>network anyway. Maybe the real problem is that LARIAT should have gone
>with licensed spectrum in the past.

The cost of the equipment, not to mention of the spectrum, would have been prohibitive. (Just TRY to obtain reasonably priced, commercially manufactured spread spectrum equipment for a licensed band.) Remember, LARIAT is a non-profit, grass roots community organization that cannot (by law!) keep any more of its income than is required to maintain a modest cash reserve.

Metricom and K N Energy, on the other hand, have deep pockets, are for-profit, are engaged in entrepreneurial activities. What's more, theyseem to feel a need to monopolize the spectrum on which they operate. (They have even sought to limit the power output of hams -- who are primary users -- on that band.) Therefore, THEY should obtain licensed spectrum -- just like a cellular telephone company or paging service. LARIAT should not need to.

--Brett Glass

80. Re: [SS:33] Re: Help! Small community network trying to deal

From: Steve Stroh N8GNJ <n8gnj@tapr.org>
Date: Sun, 20 Sep 1998 15:32:24 -0700
To: ss@tapr.org
Message-ID: <199809202226.RAA13515@rgate2.ricochet.net>
Rendered body type: text/plain

Brett Glass <brett@lariat.org> wrote:

> Steve, it appears that you're recommending a futile approach. Are you
> really that much of a "Metricom uber alles" fan that you're willing to be
> hostile to our community's well-being? Your remarks so far certainly
> make it sound that way.

I thought about your remarks for a few days. This will be my final posting on this topic in SS. There are more relevant venues to continue this discussion if that's desired.

To answer your question, No, I'm not that big a fan of Metricom (although, for full disclosure, I am a [paying] Ricochet customer using a Ricochet unit/system in the Seattle area as my Internet connection). I'm certainly not hostile to LARIAT- I've referred to it in print as a good example of Wireless Internet Access.

Again, the reality is in Part 15 vs Part 15 disputes, both "sides" must accept the other's interference. There's a label somewhere on or with your WaveLAN equipment with words to that effect. AT&T (later Lucent) was required to get FCC certification for compliance with Part 15 rules before they could ship the WaveLAN units that LARIAT uses. Metricom was required to get FCC certification for compliance with Part 15 rules before they could deploy Ricochet units and systems. This says to me that as far as the FCC is concerned, Ricochet units and systems ARE compliant with Part 15.

If you can get the FCC to agree with you that Ricochet system operations aren't in compliance with Part 15, then you would have a reasonable case. But, that will take years, lawyers, money, and lots more technical data

than a user-based orgainization like LARIAT can likely afford.

Steve Stroh N8GNJ

81. Re: [SS:36] Re: Help! Small community network trying to deal

From: Brett Glass <brett@lariat.org>
Date: Sun, 20 Sep 1998 18:01:35 -0600
To: ss@tapr.org
Message-ID: <199809210003.SAA12431@lariat.lariat.org>
Rendered body type: text/plain

At 05:28 PM 9/20/98 -0500, Steve Stroh N8GNJ wrote:

>Again, the reality is in Part 15 vs Part 15 disputes, both "sides" must
>accept the other's interference.

This is incorrect. The EQUIPMENT must accept the interference -- in other words, while it may not work, it shouldn't catch fire, blow up, or do anything else destructive. The OWNER need not live with the interference, and in fact can sue for interference with contract, interference with business prospects, etc. in civil court. The FCC regulations do not override this.

>AT&T (later Lucent) was
>required to get FCC certification for compliance with Part 15 rules before
>they could ship the WaveLAN units that LARIAT uses. Metricom was required
>to get FCC certification for compliance with Part 15 rules before they
>could deploy Ricochet units and systems. This says to me that as far as
>the FCC is concerned, Ricochet units and systems ARE compliant with Part 15.

The Ricochet system appears to slide through an unaddressed "loophole" which the FCC should close via proper interpretation of the rules and/or by rulemaking.

>If you can get the FCC to agree with you that Ricochet system operations
>aren't in compliance with Part 15, then you would have a reasonable case.
>But, that will take years, lawyers, money, and lots more technical data
>than a user-based orgainization like LARIAT can likely afford.

You just don't get it, do you, Steve? THIS IS OUR EXISTENCE ON THE LINE HERE. Would you have us just "roll over and play dead?" Should we say, "Ooooh, the gas company and Metricom have soooooo much money and soooooo much power that they can do anything they damn please; our whole city had better just give up on having a wireless community network, and certainly on doing anything with
wireless networking in THEIR band."

And then, of course, Metricom will take over the next Part 15 band, and the next, and the next....

I think it's important to take strident and immediate action to prevent one company from taking over spectrum that's supposed to be available to all. It's clear that Steve won't give up his beloved Ricochet modem, but hopefully the rest of the participants in this list can see where things are headed. Who can help us write the proposal for rulemaking?

--Brett Glass

82. Re: [SS:37] Re: Help! Small community network trying to deal

From: Bill Vodall <Vodall@bigsky.com>
Date: Sun, 20 Sep 1998 18:59:40 -0700
To: ss@tapr.org
Message-ID: <3.0.5.32.19980920185940.009ba2a0@wa7nwp.dynip.com>
Rendered body type: text/plain

At 07:04 PM 9/20/98 -0500, Brett Glass wrote:
>
>And then, of course, Metricom will take over the next Part 15 band, and the
>next, and the next....

FYI.   Metricom has purchased spectrum at public auction for their next generation system. It's higher frequency (2G?) and is not shared.

Bill - WA7NWP

83. Re: [SS:38] Re: Help! Small community network trying to deal

From: Brett Glass <brett@lariat.org>
Date: Sun, 20 Sep 1998 20:27:54 -0600
To: ss@tapr.org

Message-ID: <199809210229.UAA13418@lariat.lariat.org>
Rendered body type: text/plain

Yes, Bill -- and I was quite hopeful about this. However, according to
Tim Dreisbach, CEO of Metricom, the licensed spectrum is used IN ADDITION
TO taking over Part 15 spectrum. It's used for communications between the
hub, or Wired Access Point (WAP), and the pole-top units, while the 915 MHz
band is STILL monopolized for communications between the pole-top units
and the consumer radios. (It's unclear which band the pole-top units use
to communicate with one ANOTHER.)

So, Metricom still insists on "owning" Part 15 spectrum even in
situations where it's licensed more. In short, it's still singing, "This
band is my band, and only my band...."

--Brett Glass

At 09:00 PM 9/20/98 -0500, Bill Vodall wrote:

>At 07:04 PM 9/20/98 -0500, Brett Glass wrote:
>>
>>And then, of course, Metricom will take over the next Part 15 band, and the
>>next, and the next....
>
>FYI.   Metricom has purchased spectrum at public auction for their
>next generation system. It's higher frequency (2G?) and is not shared.
>
>Bill - WA7NWP
>

84. Re: [SS:39] Re: Help! Small community network trying to deal

From: "Greg Jones, WD5IVD" <wd5ivd@tapr.org>
Date: Sun, 20 Sep 1998 21:58:55 -0500
To: ss@tapr.org
Message-ID: <v04011703b22b70cdcd1e@[207.8.125.53]>
Rendered body type: text/plain

They might say that they want to rule whatever band they are on,but Part 15
is not a service and amateur radio is. This is not an issue for us.

So, what is the point of this debate again ?

Greg

>Yes, Bill -- and I was quite hopeful about this. However, according to
>Tim Dreisbach, CEO of Metricom, the licensed spectrum is used IN ADDITION
>TO taking over Part 15 spectrum. It's used for communications between the
>hub, or Wired Access Point (WAP), and the pole-top units, while the 915 MHz
>band is STILL monopolized for communications between the pole-top units
>and the consumer radios. (It's unclear which band the pole-top units use
>to communicate with one ANOTHER.)
>
>So, Metricom still insists on "owning" Part 15 spectrum even in
>situations where it's licensed more. In short, it's still singing, "This
>band is my band, and only my band...."
>
>--Brett Glass

Greg Jones, WD5IVD   Austin, Texas
wd5ivd@tapr.org   http://www.tapr.org/~wd5ivd

85. Re: [SS:40] Re: Help! Small community network trying to deal

From: Brett Glass <brett@lariat.org>
Date: Sun, 20 Sep 1998 22:00:06 -0600
To: ss@tapr.org
Message-ID: <199809210402.WAA14054@lariat.lariat.org>
Rendered body type: text/plain

The point -- and I'm not sure it's a debate, by the way -- is that LARIAT
needs help proposing expedited rulemaking that will rein in Metricom.

Metricom is a threat to hams, too; you can expect them to keep on going
back to the FCC with requests to keep hams from using the bandwidth they
want to "own." They've already done it once, in 1996-7. At that time, they
sought to limit hams to 1 watt ERP on the bands they wanted, because they
KNEW that by deploying hundreds of transmitters they could then knock the
hams off the band the way they're threatening to knock LARIAT off the band.

The appropriate thing is for them to use licensed spectrum, just like the
paging and cellular phone companies they resemble.

We need support from hams, who are also threatened, to rein in Metricom's
attempts to take over public spectrum for their own exclusive use. Hams
are more familiar with the FCC rule making process than anyone; that's
why we're appealing to them for help. We'd like to see your group get
on board....

--Brett Glass

At 10:04 PM 9/20/98 -0500, Greg Jones, WD5IVD wrote:

>They might say that they want to rule whatever band they are on,but Part 15
>is not a service and amateur radio is. This is not an issue for us.
>
>So, what is the point of this debate again ?
>
>Greg

86. Re: [SS:41] Re: Help! Small community network trying to deal

From: "Greg Jones, WD5IVD" <wd5ivd@tapr.org>
Date: Sun, 20 Sep 1998 23:59:33 -0500
To: ss@tapr.org
Message-ID: <v04011706b22b87a229a1@[207.8.125.53]>
Rendered body type: text/plain

>The point -- and I'm not sure it's a debate, by the way -- is that LARIAT
>needs help proposing expedited rulemaking that will rein in Metricom.
>
>Metricom is a threat to hams, too; you can expect them to keep on going
>back to the FCC with requests to keep hams from using the bandwidth they
>want to "own." They've already done it once, in 1996-7. At that time, they
>sought to limit hams to 1 watt ERP on the bands they wanted, because they
>KNEW that by deploying hundreds of transmitters they could then knock the
>hams off the band the way they're threatening to knock LARIAT off the band.

I know very much about this since I am one of the two TAPR SS STA holders
and work with Dewayne on all the TAPR filings regarding SS issues to the
FCC. But this is only affecting spread specturm rule changes, not any
current or traditional modes. I don't see the FCC placing power limits on
traditional modes on the shared part 15 bands. At least not yet.

They obviously made their point to the FCC, since a discussion over a year
ago with people who talk with the FCC indicated that they were leaning
towards some type of power limit for amateur SS operations on the bands
that have Part 15 activity under the new rules under writing. With luck
and more FCC writing on our part we will only have to place power control
limits on things over 1 watt, which would be good practice for us anyway.

>The appropriate thing is for them to use licensed spectrum, just like the
>paging and cellular phone companies they resemble.

Well, that is one way to look at it. Unfortunately for your frame of mind
they have meet the requirements of Part 15 and can thus do their thing on
that band. That is what Part 15 was all about. The real force will kick
in when users of cordless phone and other thing start to have problems and
the word gets out what is causing it and they start calling thier
congressional rep.

>We need support from hams, who are also threatened, to rein in Metricom's
>attempts to take over public spectrum for their own exclusive use. Hams
>are more familiar with the FCC rule making process than anyone; that's
>why we're appealing to them for help. We'd like to see your group get
>on board....

Well, if Metricom is really threatening 'public spectrum' then I think AT&T
and other Part 15 mfgs will be well ahead of us in taking care of this
issue, since they depend on it more than we do in order to make money. We
can always raise power limits on traditional modes on any Part 15 bands to
correct any problems.

We can yell to the havens all we want, but complaining to the FCC about
this issue will do little to further our cause. What we have to focus on
is generating technology that will handle the fact that one day we will be
on bands that we are not primary on, thus we can't interfere and have to
take interference all the time.

Until we have that technology in place, then our hobby is under a sword for

the distant future.

Cheers - Greg, WD5IVD

Greg Jones, WD5IVD Austin, Texas
wd5ivd@tapr.org http://www.tapr.org/~wd5ivd

87. Re: [SS:42] Re: Help! Small community network trying to deal

From: Brett Glass <brett@lariat.org>
Date: Mon, 21 Sep 1998 01:25:25 -0600
To: ss@tapr.org
Message-ID: <199809210727.BAA00456@lariat.lariat.org>
Rendered body type: text/plain

At 12:00 AM 9/21/98 -0500, Greg Jones, WD5IVD wrote:

>Well, if Metricom is really threatening 'public spectrum' then I think AT&T
>and other Part 15 mfgs will be well ahead of us in taking care of this
>issue, since they depend on it more than we do in order to make money. We
>can always raise power limits on traditional modes on any Part 15 bands to
>correct any problems.

The problem, with these guys, is that in order to complain they have to admit that they're being interfered with. Which they don't want to; it discourages customers. I'm trying to urge them on, though.

>We can yell to the havens all we want, but complaining to the FCC about
>this issue will do little to further our cause.

It's the ONLY thing that will further our cause. There's a player out there who's not playing fair; the ref needs to blow the whistle and threaten to kick him out of the game for unsportsmanlike conduct.

>What we have to focus on
>is generating technology that will handle the fact that one day we will be
>on bands that we are not primary on, thus we can't interfere and have to
>take interference all the time.

And then you get an endless escalation, with each technology trying to beat up on the other. Not good. Better to have rules that force them to cooperate.

>Until we have that technology in place, then our hobby is under a sword for
>the distant future.

For LARIAT, it's more than a hobby. We do important things for our community. See our white paper and news bulletin.

--Brett Glass

88. Re: Help! Small community network trying to deal

From: "Gwyn Reedy" <gwyn@paccomm.com>
Date: Mon, 21 Sep 1998 06:44:15 -0400
To: <ss@tapr.org>
Message-ID: <01bde54c$c74e13e0$234f460c@mgr>
Rendered body type: text/plain

It appears that there will be either an endless escalation of technology or of restrictive regulations. I much prefer the former as we have an excess of regulation as it is.

I don't think non-profit vs for-profit has much to do with it but this is certainly not the forum to discuss that. I have no doubt you really do good things for your community, but does that entitle you to special treatment by regulatory bodies?

Why don't you approach Metricom or the local utility with an offer - that they cut you a good deal to replace your wavelan equipment with their equipment. Each side comes out ahead (even the SS group who don't have to be drawn into this any farther.)

Gwyn Reedy
W1BEL

-----Original Message-----
From: Brett Glass <brett@lariat.org>
To: ss@tapr.org <ss@tapr.org>
Date: Monday, September 21, 1998 4:18 AM
Subject: [SS:43] Re: Help! Small community network trying to deal

>And then you get an endless escalation, with each technology trying to
>beat up on the other. Not good. Better to have rules that force them to
>cooperate.
>
>For LARIAT, it's more than a hobby. We do important things for our
community.
>

89. RE: 32] Re: SS on HF

From: "Lanier, Robert" <rlanier@harris.com>
Date: Mon, 21 Sep 1998 08:55:11 -0400
To: "'ss@tapr.org'" <ss@tapr.org>
Message-ID: <275399FB18C4D111871300805FBEB72F01215B77@corpmx6.ess.harris.com>
Rendered body type: text/plain

What does church and the Southern Baptists have to do with ham radio?

> -----Original Message-----
> From: ss@tapr.org [SMTP:ss@tapr.org]
> Sent: Saturday, September 19, 1998 3:57 PM
> To: ss@tapr.org
> Subject: [SS:32] Re: SS on HF
>
> Listening for the military stuff I used to be part of 10 years ago, I
> find that almost all of it is gone. Since we were using more and
> more satellite gear, and JTIDS, I think spectrum is available, and
> if we don't apply for it, the Church will. I'd rather see more
> HF for Hams, then HF for churches. They've already taken over
> the AM broadcast band. We may be better off going to the
> Southern Baptists for spectrum, rather than the ARRL??
>
> The other option is to take over the Novice bands, but keep the
> power limit. Since there will be no more Novices (I hope) there
> is no more need for the CW allocation. There's sufficient CW
> spectrum on HF. 15 meters and 21.1 to 21.2 is a good
> candidate. The 50 kHz on 40 meters is another, and 3.5 to
> 3.6 MHz on 80 is another. 10 meters is so unused, I mostly
> hear CB radio ops going on locally, as there is no Ham
> activity.
>
> I think HF is one of those areas where intelligent hoppers
> can be deployed. A good application, would be internet
> or VHF/UHF connections, where radios can use band activity
> from all over the US to map frequencies from. My radio could
> take the data from another radio in town over UHF or the
> internet, to determine the next 10 hopping frequencies, or
> a code that selects the next band to hop to. Something
> that can't be done locally, as the mapping receiver would
> be overpowered. Another idea is a common channel on HF
> using FSK to distribute hopping data. Very low baud rates
> needed.
>
> I don't think each radio must operate as a single
> entity, but with technology today, could work in a
> LAN or WAN type network.
>
> We can't do anything if the Church takes over, or 10
> moonbounce operators control the HF spectrum.
>
> Time to move on and clean up the rules. We're not
> going to be able to do anything unless they are modified.
> The STA route is a dead end. People spend more time
> shuffling paper than burning solder, or writing code.
>
> Steve

90. Re: [SS:41] Re: Help! Small community network trying to deal

From: "Frederick M. Spinner" <fspinner@hotmail.com>
Date: Mon, 21 Sep 1998 13:10:27 GMT
To: ss@tapr.org
Message-ID: <19980921131028.15042.qmail@hotmail.com>
Rendered body type: text/plain

Okay, so send a proposal to the FCC to do this. This is more
appropriate than trying to go to civil court!

I'm not too worried as I can put 40W (at 902) out on top of them anytime
I want! :-) Grin.

Theres a solution: Get as many hams on the band as you can, and
drive them off! We're licensed, they are not, they lose! :-)

Fred KA9VAW

>Date: Sun, 20 Sep 1998 23:02:36 -0500 (CDT)
>Reply-To: ss@tapr.org
>From: Brett Glass <brett@lariat.org>
>To: ss@tapr.org
>Subject: [SS:41] Re: Help! Small community network trying to deal
>
>The point -- and I'm not sure it's a debate, by the way -- is that
LARIAT
>needs help proposing expedited rulemaking that will rein in Metricom.
>
>Metricom is a threat to hams, too; you can expect them to keep on going
>back to the FCC with requests to keep hams from using the bandwidth
they
>want to "own." They've already done it once, in 1996-7. At that time,
they
>sought to limit hams to 1 watt ERP on the bands they wanted, because
they
>KNEW that by deploying hundreds of transmitters they could then knock
the
>hams off the band the way they're threatening to knock LARIAT off the
band.
>
>The appropriate thing is for them to use licensed spectrum, just like
the
>paging and cellular phone companies they resemble.
>
>We need support from hams, who are also threatened, to rein in
Metricom's
>attempts to take over public spectrum for their own exclusive use. Hams
>are more familiar with the FCC rule making process than anyone; that's
>why we're appealing to them for help. We'd like to see your group get
>on board....
>
>--Brett Glass
>
>At 10:04 PM 9/20/98 -0500, Greg Jones, WD5IVD wrote:
>
>>They might say that they want to rule whatever band they are on,but
Part 15
>>is not a service and amateur radio is. This is not an issue for us.
>>
>>So, what is the point of this debate again ?
>>
>>Greg
>
>

_____
Get Your Private, Free Email at http://www.hotmail.com

91. Re: [SS:46] Re: Help! Small community network trying to deal

From: "Greg Jones, WD5IVD" <wd5ivd@tapr.org>
Date: Mon, 21 Sep 1998 09:23:23 -0500
To: ss@tapr.org
Message-ID: <v0401170eb22c0e0ebb4e@[207.8.125.53]>
Rendered body type: text/plain

You hit the point Fred right on.

We can increase power, put more antennas in the air and so on. We are a
service they are not. To go to the FCC or sue them makes little sense.

To me, it sounds like Brett and his group just need to invest a little more
money or build additional equipment to solve this problem. Technology
will be much cheaper and much more time efficient then trying to pursue
legal means.

It is to easy for amateurs to call for legal help when a technical
challenge needs to be used to solve a problem. When we have to use and
talk to the FCC is when the rules are so restrictive that change is needed
to allow the ability of new experimentation and technical pursuits to

happen. Like RM-8737.

Brett, not sure if you are going to see much more sympathy from this group,
since this group is very much aimed toward building systems that don't
require legal means to make amateurs happy.

If you are having a problem using your WaveLan equipment then you have
choices that other Part 15 users don't.   Unless you are operating them as
Part 15 devices and not under Part 97 ?

I think if you have technical questions on how to improve your network
design to overcome this issue, I am sure there will be people on this list
that can help you with link design issue, getting information on buying or
building 900Mhz amps, finding better antennas and the like.

I had a simple question I don't think I saw answered. Are you using
vertical or horz polarity ?

As amateurs, we need to focus on the technical and experimentation issues
of the hobby to continue to prove that we deserve the frequencies we are
allocated. Going to the FCC and complaining is what they don't want to
see. Ever time we go to them, they just add it up to the many other times
and figure out ways in the future that will lower the number of times we
do it in the future. We are low on the food chain.

Cheers - Greg

>Okay, so send a proposal to the FCC to do this. This is more
>appropriate than trying to go to civil court!
>
>I'm not too worried as I can put 40W (at 902) out on top of them anytime
>I want! :-) Grin.
>
>Theres a solution: Get as many hams on the band as you can, and
>drive them off! We're licensed, they are not, they lose! :-)
>
>Fred KA9VAW
>
>
>>Date: Sun, 20 Sep 1998 23:02:36 -0500 (CDT)
>>Reply-To: ss@tapr.org
>>From: Brett Glass <brett@lariat.org>
>>To: ss@tapr.org
>>Subject: [SS:41] Re: Help! Small community network trying to deal
>>
>>The point -- and I'm not sure it's a debate, by the way -- is that
>LARIAT
>>needs help proposing expedited rulemaking that will rein in Metricom.
>>
>>Metricom is a threat to hams, too; you can expect them to keep on going
>>back to the FCC with requests to keep hams from using the bandwidth
>they
>>want to "own." They've already done it once, in 1996-7. At that time,
>they
>>sought to limit hams to 1 watt ERP on the bands they wanted, because
>they
>>KNEW that by deploying hundreds of transmitters they could then knock
>the
>>hams off the band the way they're threatening to knock LARIAT off the
>band.
>>
>>The appropriate thing is for them to use licensed spectrum, just like
>the
>>paging and cellular phone companies they resemble.
>>
>>We need support from hams, who are also threatened, to rein in
>Metricom's
>>attempts to take over public spectrum for their own exclusive use. Hams
>>are more familiar with the FCC rule making process than anyone; that's
>>why we're appealing to them for help. We'd like to see your group get
>>on board....
>>
>>--Brett Glass
>>
>>At 10:04 PM 9/20/98 -0500, Greg Jones, WD5IVD wrote:
>>
>>>They might say that they want to rule whatever band they are on,but
>Part 15
>>>is not a service and amateur radio is. This is not an issue for us.

>>>
>>>So, what is the point of this debate again ?
>>>
>>>Greg
>>
>>
>
>
>____
>Get Your Private, Free Email at http://www.hotmail.com

Greg Jones, WD5IVD   Austin, Texas
wd5ivd@tapr.org   http://www.tapr.org/~wd5ivd

92. Re: Help! Small community network trying to deal

From: Jeffrey Austen <jausten@tntech.edu>
Date: Mon, 21 Sep 1998 11:55:49 -0600
To: ss@tapr.org
Message-ID: <l03130300b22c426ec4d4@[149.149.39.26]>
Rendered body type: text/plain

>>Again, the reality is in Part 15 vs Part 15 disputes, both "sides" must
>>accept the other's interference.
>
>This is incorrect. The EQUIPMENT must accept the interference -- in other
>words, while it may not work, it shouldn't catch fire, blow up, or do anything
>else destructive. The OWNER need not live with the interference, and in fact
>can sue for interference with contract, interference with business prospects,
>etc. in civil court. The FCC regulations do not override this.

By my understanding of the rules this does not make sense. Please explain
why the owner can sue over the interference. References to relevant
statutes and court decisions will help justify the answer.

If you can do this, I think you will have found the solution to your problem!

Jeff, k9ja

Jeffrey Austen | Tennessee Technological University
jausten@tntech.edu | Box 5004
+1-931-372-3485 | Cookeville Tennessee 38505   U.S.A.

93. FHSS radio project

From: "Johan S. Sosa" <johan@unixville.com>
Date: Mon, 21 Sep 1998 14:05:57 -0400
To: <ss@tapr.org>
Message-ID: <001501bde58a$7b976990$edc74cc7@snoopdogg.expressweb.com>
Rendered body type: text/plain

Does anyone know the status of the FHSS radio project ?

'73
-Johan

94. Re: [SS:48] Re: Help! Small community network trying to deal

From: Brett Glass <brett@lariat.org>
Date: Mon, 21 Sep 1998 12:08:53 -0600
To: ss@tapr.org
Message-ID: <199809211818.MAA04201@lariat.lariat.org>
Rendered body type: text/plain

Well, as you know, it's possible to sue someone locally for fraud
or libeleven though the Constitution guarantees freedom of speech
at the Federal level. Why? Because you're free to speak, but if
you use that right to accomplish something that hurts someone,
you're still liable for hurting that person.

I think the same thing is true here. (I don't have access to the
case law, but I'm trying to find a law student who can help me
get it.) If a company uses its unencumbered access to the airwaves
via Part 15 to wreck someone else's business knowingly and wantonly,
it may be liable under "unfair competition" statutes or for
interference with contract or business prospects (common law).
We are researching this.

Nonetheless, I think that rule making is important here. We have

one particular greedy corporation here that's violating the spirit
(and possibly the letter; we're not sure but are researching it)
of the regulations. I think the regs should address the problem
directly.

--Brett Glass

At 12:02 PM 9/21/98 -0500, Jeffrey Austen wrote:

>>>Again, the reality is in Part 15 vs Part 15 disputes, both "sides" must
>>>accept the other's interference.
>>
>>This is incorrect. The EQUIPMENT must accept the interference -- in other
>>words, while it may not work, it shouldn't catch fire, blow up, or do anything
>>else destructive. The OWNER need not live with the interference, and in fact
>>can sue for interference with contract, interference with business prospects,
>>etc. in civil court. The FCC regulations do not override this.
>
>By my understanding of the rules this does not make sense. Please explain
>why the owner can sue over the interference. References to relevant
>statutes and court decisions will help justify the answer.
>
>If you can do this, I think you will have found the solution to your problem!
>
>Jeff, k9ja
>
>---
>Jeffrey Austen | Tennessee Technological University
>jausten@tntech.edu | Box 5004
>+1-931-372-3485 | Cookeville Tennessee 38505   U.S.A.
>
>

95. Re: [SS:49] FHSS radio project

From: "Greg Jones, WD5IVD" <wd5ivd@tapr.org>
Date: Mon, 21 Sep 1998 14:15:34 -0500
To: ss@tapr.org
Message-ID: <v04011700b22c55f21226@[128.83.74.103]>
Rendered body type: text/plain

Yes.

The digital board is being completed. The team has completed the porting
of the router and I got an e-mail yesterday that it was funtioning on the
digital board with no problems. A major milestone.

Now comes the finsih to the RF board and getting the digital board and RF
board interoperating. As on the web page, the VCOs are hopping correctly,
but more than that is requitred.

Tom, N5EG, will be making a full report at the DCC this weekend and the
audio will be available shortly after that.

Cheers - Greg

>Does anyone know the status of the FHSS radio project ?
>
>'73
>-Johan

Greg Jones, WD5IVD   Austin, Texas
wd5ivd@tapr.org   http://www.tapr.org/~wd5ivd

96. Re: [SS:51] Re: FHSS radio project

From: Brett Glass <brett@lariat.org>
Date: Mon, 21 Sep 1998 14:19:19 -0600
To: ss@tapr.org, ss@tapr.org
Message-ID: <199809212024.OAA05156@lariat.lariat.org>
Rendered body type: text/plain

Is this hopper suitable for Part 15 use?

--Brett Glass

At 02:27 PM 9/21/98 -0500, Greg Jones, WD5IVD wrote:

>Yes.

>
>The digital board is being completed. The team has completed the porting
>of the router and I got an e-mail yesterday that it was funtioning on the
>digital board with no problems. A major milestone.
>
>Now comes the finsih to the RF board and getting the digital board and RF
>board interoperating. As on the web page, the VCOs are hopping correctly,
>but more than that is requitred.
>
>Tom, N5EG, will be making a full report at the DCC this weekend and the
>audio will be available shortly after that.
>
>Cheers - Greg
>
>>Does anyone know the status of the FHSS radio project ?
>>
>>'73
>>-Johan
>
>-----
>Greg Jones, WD5IVD   Austin, Texas
>wd5ivd@tapr.org   http://www.tapr.org/~wd5ivd
>
>

97. Re: [SS:52] Re: FHSS radio project

From: "Greg Jones, WD5IVD" <wd5ivd@tapr.org>
Date: Mon, 21 Sep 1998 15:52:10 -0500
To: ss@tapr.org
Message-ID: <v04011701b22c6cd2cd24@[128.83.74.103]>
Rendered body type: text/plain

Let me suggest you read the on-line paper and listen to the audio from the
two conference presentations.

http://www.tapr.org/ss

Cheers - Greg

>Is this hopper suitable for Part 15 use?
>
>--Brett Glass

Greg Jones, WD5IVD   Austin, Texas
wd5ivd@tapr.org   http://www.tapr.org/~wd5ivd

98. Re: [SS:51] Re: FHSS radio project

From: JOHN MALMBERG <LNUSSAT.JMALMBER@eds.com>
Date: Mon, 21 Sep 1998 19:37:39 -0400
To: SS <ss@TAPR.ORG>
Message-ID: <009500001844271100000 2L012*@MHS>
Rendered body type: text/plain

As a fund raiser, has TAPR considered cash advances on future purchases of the
equipment, and are you close to determining what the final cost will be?

Locally, two hams have said that they would get a SS radio if I got one.

I am looking for material to send to the club's newsletter editor on drumming
up interest.

Local hams are cheap, so I need material to let them know how much setting up a
network would cost, also what impact the local terrain of rolling hills will
cause.

-John
WB8TYW @ K4HRY.#MIDTN.TN.USA.NA
E-Mail: LNUSSAT.JMALMBER@GMEDS.COM

99. Re: [SS:54] Re: FHSS radio project

From: "Steve Sampson" <ssampson@usa-site.net>
Date: Mon, 21 Sep 1998 20:11:00 -0500
To: <ss@tapr.org>
Message-ID: <000401bde5c5$dd31fa40$87228cd1@dodge.usa-site.net>
Rendered body type: text/plain

Whatever the cost...
One thing to keep in mind, is that it won't be just a TNC. That is, it

will be a complete solution. Add power, antenna, and Ethernet.

So comparison wise, they won't be buying just a TNC to use with
a current radio, but another radio/modem combo.

I notice that M^2 antennas have a pretty good price on 900 MHz beams.
(at least the 10 El). I have their 430 MHz model and it is very high quality.

http://www.m2inc.com

Steve

-----Original Message-----
From: JOHN MALMBERG <LNUSSAT.JMALMBER@eds.com>
To: ss@tapr.org <ss@tapr.org>
Date: Monday, September 21, 1998 7:40 PM
Subject: [SS:54] Re: FHSS radio project

>As a fund raiser, has TAPR considered cash advances on future purchases of the
>equipment, and are you close to determining what the final cost will be?
>
>Locally, two hams have said that they would get a SS radio if I got one.
>
>I am looking for material to send to the club's newsletter editor on drumming
>up interest.
>
>Local hams are cheap, so I need material to let them know how much setting up a
>network would cost, also what impact the local terrain of rolling hills will
>cause.

100. Re: Help! Small community network trying to deal

From: "Gary L. Grebus" <glg@balrog.k8lt.ampr.org>
Date: Mon, 21 Sep 1998 23:03:12 -0400
To: ss@tapr.org
Message-ID: <199809220303.XAA27525@balrog.k8lt.ampr.org>
Rendered body type: text/plain

>This is incorrect. The EQUIPMENT must accept the interference -- in other
>words, while it may not work, it shouldn't catch fire, blow up, or do anything
>else destructive. The OWNER need not live with the interference, and in fact
>can sue for interference with contract, interference with business prospects,
>etc. in civil court. The FCC regulations do not override this.

The general flavor of this argument is familiar, although I don't know its legal merits. It's the same argument by which operators of fully legal amateur stations have been sued for interference to poorly designed consumer electronics. If this is part of your legal strategy, you may not find much sympathy in the amateur community.

/gary
K8LT

101. Re: [SS:54] Re: FHSS radio project

From: "Greg Jones, WD5IVD" <wd5ivd@tapr.org>
Date: Mon, 21 Sep 1998 23:12:53 -0500
To: ss@tapr.org
Message-ID: <v04011704b22cc9005c20@[207.8.125.53]>
Rendered body type: text/plain

>As a fund raiser, has TAPR considered cash advances on future purchases of the
>equipment, and are you close to determining what the final cost will be?

We are a bit away from taking money for equipment. We do have an on going
fund raiser. If anyone wants to donate money -- we can always use it.

As of right now the goal will be to get the first pair of radio
operational. A major milestone was reached this past week when the
computer/digital board saw the Comer TCP/IP stack and OS operational and
sending packets to and from over the Ethernet interface. Now to focus on
the RF parts of the unit.

>Locally, two hams have said that they would get a SS radio if I got one.

That is great. it is going to take groups of people to make this fun and
interesting.

Much will change between now and the final choices, but I see us doing a

sort of TNC-1 beta distribution when the time comes. What this would mean that in order to get radios, groups of amateurs would have to come forward to purchase beta radios in order to make sure that enough critical mass was available in their local area to make something happen.

Don't get your hopes up. This is a ways off. See my suggestions below for doing something in the mean time.

>I am looking for material to send to the club's newsletter editor on drumming
>up interest.

The place is to start on the TAPR web page. Either my Pres columns or the DCC papers on the SS project.

>Local hams are cheap, so I need material to let them know how much setting
>up a
>network would cost, also what impact the local terrain of rolling hills will
>cause.

Cheap is no longer a defense or an excuse these days. Cheap means that our hobby is going down. I see hams at every hamfest dropping tons of money on stuff and computers. People don't seem to think twice about spending money on computers, Internet access, or whatever over a year.

Personally I think many of the current Part 15 devices like Breezecom and the rest at $1000-$2000 a unit are inexpensive for what they do. Cheap is a relative term. Typically a matter of understanding what something is worth.

Our goal has always been to shot for something around $500 a unit, but I wouldn't be surprised that the beta units will cost more until production increases and cost decline per unit. Until we have something to run real production numbers around for a final unit, who knows.

I don't see setting up a SS network different then setting up any other type of amateur networking. Figure $1000-$2000 a network node site to get started. Antennas, coax, radios, supplies, etc.   This number seems to be the same for a long time now. I know I have that much or more in at least two systems I have in operations.

I think what people need to start thinking about is how to build networks. Putting up a central site that covers everyone to share the resource (like has been done forever) is not one of the best solutions. Old paradigms of networking is not going to work in many cases.

The TAPR SS radio is really a solution for high-speed local access from your home to a site were it can go elsewhere and allow many users to share the resource without seeing a lot of single channel congestion. At the DCC TAPR BoD meeting will be discussing a potential project that someone has going now that would provide backbone linking from 56K to 1Mbps on something other than 900Mhz. Once you get these local SS nodes up, we have to link them in such a way that allows us to communicate between and among it other. The 900Mhz radio is justa first step on many levels. Let's get something back in the hands of amateurs that is an enabling tool.

You can start doing something today with existing SS STAs. No one should be waiting for us (TAPR) to hand them a radio.   The TAPR SS STA is open to anyone that wants to go out and get equipment and start experimenting with might work and get some RF on the air. There is plenty of opportunity for doing stuff. We will be showing off the TALnet radio at the DCC and taking names of those who want access to the router/radio sets. Just visit Barry's (VE3JF) site on wireless radio solution and you can see what might be possible to being to experiment with.

I started purchasing my own SS equipment over a year ago and putting it up to see what it would do and wouldn't do in stationary and mobile environments. It has been interesting to see how these things work and what kind of environment is really out there.

Cheers - Greg, WD5IVD

Greg Jones, WD5IVD Austin, Texas
wd5ivd@tapr.org http://www.tapr.org/~wd5ivd

102. WaveLAN?

From: Jacob W Janovetz <janovetz@ews.uiuc.edu>
Date: Mon, 21 Sep 1998 23:22:07 -0500 (CDT)
To: ss@tapr.org
Message-ID: <199809220441.XAA20760@eesn26.ews.uiuc.edu>
Rendered body type: text/plain

Howdy all...

   I've been watching for a while and have seen references to the
WaveLAN devices here. I've recently been interested in setting up
a wireless ethernet connection to my house (from school). Assuming
I have access to all the ethernet jazz on the school side of things,
I'm wondering what I need to setup this connection.
   I'd prefer to not have something PC-based because of the
typical lack of support for Linux. It would also be nice to
not require a PC at all (just have a hub that looks like a
regular hub). Any ideas for what are the recommended solutions
and what sort of costs I'm looking at? (128kbps would be nice.
Faster the better)

   Thanks!

    Cheers,
    Jake

--
   janovetz@uiuc.edu | Once you have flown, you will walk the earth with
 University of Illinois | your eyes turned skyward, for there you have been,
                        | there you long to return.   -- da Vinci
        PP-ASEL | http://www.ews.uiuc.edu/~janovetz/index.html

103. Re: [SS:56] Re: Help! Small community network trying to deal

From: Brett Glass <brett@lariat.org>
Date: Tue, 22 Sep 1998 00:07:27 -0600
To: ss@tapr.org
Message-ID: <199809221349.HAA11830@lariat.lariat.org>
Rendered body type: text/plain

At 10:05 PM 9/21/98 -0500, Gary L. Grebus wrote:

>The general flavor of this argument is familiar, although I don't know its
>legal merits. It's the same argument by which operators of fully legal
>amateur stations have been sued for interference to poorly designed consumer
>electronics. If this is part of your legal strategy, you may not find much
>sympathy in the amateur community.

Well, I think the amateur community OUGHT to be sympathetic, as we have here
a user of the spectrum that wants to keep ANYONE else -- hams included -- from
using it. If the legal argument has merit, they certainly should support it.

--Brett

104. Re: [SS:58] WaveLAN?

From: Pinchook Ronen <ronen@ronen.netmanage.co.il>
Date: Tue, 22 Sep 98 18:58:30 EDT
To: ss@tapr.org
Message-ID: <288990@ronen.netmanage.co.il>
Rendered body type: text/plain

try the www.breezecom.com
they might solve your problem
Ronen

--------***********----------**********------*******
 Home of Chameleon , TCP/IP applications for Windows
Ronen Pinchook (4Z4ZQ)   Phone: 972-4-8550123
NetManage Israel, Ltd.   Fax: 972-4-8550122
E-Mail: ronen@netmanage.co.il
****

105. WaveLAN vs. Breezecom

From: Brett Glass <brett@lariat.org>
Date: Tue, 22 Sep 1998 11:33:08 -0600
To: ss@tapr.org, ss@tapr.org
Message-ID: <199809221735.LAA14171@lariat.lariat.org>
Rendered body type: text/plain

Breezecom's equipment operates at 115.2 Kbps. Our member
organizations are running Web servers and cannot operate
at this slow a speed.

Incidentally, WaveLAN equipment fared BETTER than Breezecom's
in the face of interference from a nearby link in tests
performed by a California school district. See

http://www.fsusd.k12.ca.us/WIRETEST.HTM

for details.

--Brett Glass

At 12:00 PM 9/22/98 -0500, Pinchook Ronen wrote:

>try the www.breezecom.com
>they might solve your problem
>Ronen
>
>--------***********----------*********-------*******
> Home of Chameleon , TCP/IP applications for Windows
>Ronen Pinchook (4Z4ZQ)   Phone: 972-4-8550123
>NetManage Israel, Ltd.   Fax: 972-4-8550122
>E-Mail: ronen@netmanage.co.il
>********------------**********----------*******-------
>

106. Re: [SS:46] Re: Help! Small community network trying t

From: John Rauch <john@web-cycat.com>
Date: Tue, 22 Sep 1998 13:46:42 -0400
To: ss@tapr.org
Message-ID: <3.0.3.32.19980922134642.00817e30@web-cycat.com>
Rendered body type: text/plain

Well, you may have just "hit" on a temporary solution to help. Contact
your local ham club and suggest that they have a "field day" type test of
their 902 equipment at the same time that a demonstration of the systems
are to be made. Clearly, ALL parties will see that type 15 systems are
not dependable under such frequency use.

At 10:01 AM 9/21/1998 -0500, you wrote:
>Okay, so send a proposal to the FCC to do this. This is more
>appropriate than trying to go to civil court!
>
>I'm not too worried as I can put 40W (at 902) out on top of them anytime
>I want! :-) Grin.
>
>Theres a solution: Get as many hams on the band as you can, and
>drive them off! We're licensed, they are not, they lose! :-)
>
>Fred KA9VAW
>
>
>>Date: Sun, 20 Sep 1998 23:02:36 -0500 (CDT)
>>Reply-To: ss@tapr.org
>>From: Brett Glass <brett@lariat.org>
>>To: ss@tapr.org
>>Subject: [SS:41] Re: Help! Small community network trying to deal
>>
>>The point -- and I'm not sure it's a debate, by the way -- is that
>LARIAT
>>needs help proposing expedited rulemaking that will rein in Metricom.
>>
>>Metricom is a threat to hams, too; you can expect them to keep on going
>>back to the FCC with requests to keep hams from using the bandwidth
>they
>>want to "own." They've already done it once, in 1996-7. At that time,
>they
>>sought to limit hams to 1 watt ERP on the bands they wanted, because
>they
>>KNEW that by deploying hundreds of transmitters they could then knock
>the
>>hams off the band the way they're threatening to knock LARIAT off the
>band.
>>

>>The appropriate thing is for them to use licensed spectrum, just like
>the
>>paging and cellular phone companies they resemble.
>>
>>We need support from hams, who are also threatened, to rein in
>Metricom's
>>attempts to take over public spectrum for their own exclusive use. Hams
>>are more familiar with the FCC rule making process than anyone; that's
>>why we're appealing to them for help. We'd like to see your group get
>>on board....
>>
>>--Brett Glass
>>
>>At 10:04 PM 9/20/98 -0500, Greg Jones, WD5IVD wrote:
>>
>>>They might say that they want to rule whatever band they are on,but
>Part 15
>>>is not a service and amateur radio is. This is not an issue for us.
>>>
>>>So, what is the point of this debate again ?
>>>
>>>Greg
>>
>>
>
>
>____
>Get Your Private, Free Email at http://www.hotmail.com
>
>
>
>
>

John Rauch, N4YXS
APRS Active 144.39, 442.075
Seminole County
Florida
N28 41.128
W081 26.155

107. Re: [SS:61] WaveLAN vs. Breezecom

From: John Hansen <hansen@fredonia.edu>
Date: Tue, 22 Sep 1998 13:53:47 -0400
To: ss@tapr.org
Message-ID: <3.0.3.32.19980922135347.0070eda4@oak.ait.fredonia.edu>
Rendered body type: text/plain

At 12:41 PM 9/22/98 -0500, you wrote:
>Breezecom's equipment operates at 115.2 Kbps. Our member
>organizations are running Web servers and cannot operate
>at this slow a speed.
>

I wonder which Breezecom model you are referring to. We've
been using Breezecom here for almost 3 years now with great
success. Speed is up to 3 Mbits/sec that steps down to 2 and 1 and
.5 as signal deteriorates. This stuff is way faster than our T-1 connection
off-campus.

John Hansen, W2FS

108. Re: [SS:63] Re: WaveLAN vs. Breezecom

From: Brett Glass <brett@lariat.org>
Date: Tue, 22 Sep 1998 12:26:17 -0600
To: ss@tapr.org, ss@tapr.org
Message-ID: <199809221829.MAA14766@lariat.lariat.org>
Rendered body type: text/plain

As I understand it, there is a faster Breezecom hopper, but its
stated range is 3000 feet. Also, remember: our schools are at
one end of the 2.4 GHz band. Breezecom's equipment, last time
I checked, used the WHOLE band; we couldn't restrict their
hoppers to keep them from potentially bringing down the schools.

--Brett

At 01:01 PM 9/22/98 -0500, John Hansen wrote:

>At 12:41 PM 9/22/98 -0500, you wrote:
>>Breezecom's equipment operates at 115.2 Kbps. Our member
>>organizations are running Web servers and cannot operate
>>at this slow a speed.
>>
>
>I wonder which Breezecom model you are referring to. We've
>been using Breezecom here for almost 3 years now with great
>success. Speed is up to 3 Mbits/sec that steps down to 2 and 1 and
>.5 as signal deteriorates. This stuff is way faster than our T-1 connection
>off-campus.
>
>John Hansen, W2FS
>

109. Re: [SS:64] Re: WaveLAN vs. Breezecom

From: John Hansen <hansen@fredonia.edu>
Date: Tue, 22 Sep 1998 15:15:05 -0400
To: ss@tapr.org
Message-ID: <3.0.3.32.19980922151505.007173d0@oak.ait.fredonia.edu>
Rendered body type: text/plain

At 01:35 PM 9/22/98 -0500, you wrote:
>As I understand it, there is a faster Breezecom hopper, but its
>stated range is 3000 feet.

Yeah, but slap one of Bob Myer's dish antennas on them (nice
fo Breezecom to use SMA connectors) and we've gone several
miles.

Also, remember: our schools are at
>one end of the 2.4 GHz band. Breezecom's equipment, last time
>I checked, used the WHOLE band; we couldn't restrict their
>hoppers to keep them from potentially bringing down the schools.
>

Youre right about that. Also, we never used more than two station
adapters at a time.

John

110. 1998 ARRL and TAPR DCC this coming weekend !

From: "Greg Jones, WD5IVD" <wd5ivd@tapr.org>
Date: Tue, 22 Sep 1998 17:41:08 -0500
To: "TAPR-BB list   mailing"<tapr-bb@tapr.org>
Cc: "HF SIG list   mailing"<hfsig@tapr.org>, " Spread Spectrum "<ss@tapr.org>,
        " TAPR/AMSAT DSP "<dsp@tapr.org>,
        "APRS SIG list   mailing"<aprssig@tapr.org>,
        "NETSIG list   mailing"<netsig@tapr.org>,
        "BBS SIG list   mailing"<bbssig@tapr.org>,
        " tacgps "<tacgps@tapr.org>, aprsnews, mic-e,
        TAPR Regional Freq <regional_freq@tapr.org>
Message-ID: <v04011717b22dd78686a9@[128.83.74.103]>
Rendered body type: text/plain

Just as a reminder the 1998 ARRL and TAPR Digital Communications Conference
in Chicago, IL is happening this weekend!

The conference schedule and information is on-line at http://www.tapr.org/dcc
The abstract page should be on-line shortly.

Hope to see you in Chicago this weekend!

Cheers - Greg Jones, WD5IVD

Greg Jones, WD5IVD   Austin, Texas
wd5ivd@tapr.org   http://www.tapr.org/~wd5ivd

111. Re: [SS:44] Re: Help! Small community network trying to deal

From: Brett Glass <brett@lariat.org>
Date: Tue, 22 Sep 1998 17:47:11 -0600
To: ss@tapr.org
Message-ID: <199809222349.RAA17548@lariat.lariat.org>
Rendered body type: text/plain

At 05:51 AM 9/21/98 -0500, Gwyn Reedy wrote:

>It appears that there will be either an endless escalation of technology or
>of restrictive regulations. I much prefer the former as we have an excess of

>regulation as it is.

In some places, we certainly do. On the other hand, this is a case where
the regulations are not working. We have here one player that "conquers" an
entire band wherever it goes via this loophole: deploy a gazillion LITTLE
transmitters and drive everyone off the band. And I mean everyone; even
cordless phone users have trouble.

>I don't think non-profit vs for-profit has much to do with it but this is
>certainly not the forum to discuss that.

I agree. I don't think it's fair to drive other for-profit users off the
band either!

>I have no doubt you really do good
>things for your community, but does that entitle you to special treatment by
>regulatory bodies?

Isn't this the rationale for hams having special treatment?

>Why don't you approach Metricom or the local utility with an offer - that
>they cut you a good deal to replace your wavelan equipment with their
>equipment. Each side comes out ahead (even the SS group who don't have to be
>drawn into this any farther.)

We have. First, the local manager says he won't give us ONE RED CENT to
relocate us to another band. (We're hoping that higher-level managers will
be more sympathetic.) Second, we CANNOT use their equipment; the data
rate is too low. It's the speed of a modem; ours is the speed of a T1 line.

--Brett

112. Re: [SS:67] Re: Help! Small community network trying to deal

From: bm@lynx.ve3jf.ampr.org
Date: Tue, 22 Sep 1998 23:49:42 -0400 (EDT)
To: ss@tapr.org
Message-ID: <199809230349.XAA14133@lynx.ve3jf.ampr.org>
Rendered body type: text/plain

Brett Glass <brett@lariat.org> wrote:
> We have. First, the local manager says he won't give us ONE RED CENT to
> relocate us to another band. (We're hoping that higher-level managers will
> be more sympathetic.) Second, we CANNOT use their equipment; the data
> rate is too low. It's the speed of a modem; ours is the speed of a T1 line.

This of course puts you at a fundamental disadvantage with respect to the
Ricochet system - the price you pay for 20 times the speed is ~20 times less
immunity from interference. However, I'm not entirely convinced that your
problem has no technical solution. According to your web pages, the
prediction of catastrophic interference from Ricochet seems to be mainly
based on one field test - one in which small yagis were aimed at each other
down a city street. The height of the antennas is not stated, but it seems
to have been quite low. Horizontal polarization was better than vertical,
but still badly interfered with. This is not surprising, given the multipath
environment that will exist at such a height in the city. Signals will
typically be coming from many directions, and be severely depolarized. In the
LARIAT network, on the other hand, I would assume you have the antennas at
rooftop levels (at least). These paths could look quite different: less
multipath, and I would expect that horizontal polarization in this case
would give you much better protection against Ricochet. Increasing the
directivity of your links with higher-gain antennas (or stacking multiples
of your existing ones) could improve things further. I'll bet that there are
folks who are successfully operating WaveLANs in Ricochet country, in the
SF Bay area and elsewhere.

While, I'm here, a correction on something I said earlier... I stated that
the bandwidth of WaveLAN is 11 MHz. This is clearly stated several times in
an article by Bruce Tuch, principle designer of WaveLAN, published in the
AT&T Tech Journal in 1993. However, Bob Buaas told me he thought the bandwidth
was actually 22 MHz, so I took a close look with a spectrum analyzer, and he
was absolutely right. The spectrum has some minor nulls at +/- 5.5 MHz, but
the main lobe of the signal is 22 MHz wide, null-to-null. This certainly
explains why the 915 MHz WaveLANs have no choice of center frequency. :-) It's
a mystery to me why Tuch's article states otherwise, but if I can ever track
down his email address, I intend to ask him.

-Barry

```
--
  Barry McLarnon  VE3JF/VA3TCP   |  bm@hydra.carleton.ca
  Ottawa Amateur Radio Club      |  bm@lynx.ve3jf.ampr.org
  Packet Working Group           |  http://hydra.carleton.ca
```

113. Re: [SS:68] Re: Help! Small community network trying to deal

From: Brett Glass <brett@lariat.org>
Date: Tue, 22 Sep 1998 22:21:16 -0600
To: ss@tapr.org
Message-ID: <199809230423.WAA19721@lariat.lariat.org>
Rendered body type: text/plain

At 10:55 PM 9/22/98 -0500, bm@lynx.ve3jf.ampr.org wrote:

>However, I'm not entirely convinced that your
>problem has no technical solution. According to your web pages, the
>prediction of catastrophic interference from Ricochet seems to be mainly
>based on one field test

Two, actually.

>- one in which small yagis were aimed at each other
>down a city street. The height of the antennas is not stated, but it seems
>to have been quite low. Horizontal polarization was better than vertical,
>but still badly interfered with. This is not surprising, given the multipath
>environment that will exist at such a height in the city.

Well, we've got some indications that there may be problems at higher levels, too.
You see, the Metricom transmitters are laid out in a grid. No matter which way
you point a directional antenna on a rooftop (it's not so bad at ground level),
you're likely to get at least one of their transmitters in the front lobe and
one in the back. Maybe more.

We don't know for sure, but we suspect that a spate of interference in June
that hurt our network might have been the result of this. We got bursts of noise
about once a second -- very much like the Ricochet system "heartbeat." They
severely impacted one of our links. There was a directional antenna, but
the Ricochet hub, or WAP (Wired Access Point), was in the front lobe
of the affected node.

Now, K N Energy says they only recently set up their transmitter, but I
wonder: could they have installed the WAP and turned it on briefly to
test it? They won't admit it, and we have no proof, but I do wonder. The
pattern looked just like Ricochet.

Also, I talked to a Metricom engineer today. I described our system, and
he put it quite bluntly: "We WILL interfere. Absolutely."

>While, I'm here, a correction on something I said earlier... I stated that
>the bandwidth of WaveLAN is 11 MHz. This is clearly stated several times in
>an article by Bruce Tuch, principle designer of WaveLAN, published in the
>AT&T Tech Journal in 1993. However, Bob Buaas told me he thought the bandwidth
>was actually 22 MHz, so I took a close look with a spectrum analyzer, and he
>was absolutely right. The spectrum has some minor nulls at +/- 5.5 MHz, but
>the main lobe of the signal is 22 MHz wide, null-to-null. This certainly
>explains why the 915 MHz WaveLANs have no choice of center frequency. :-) It's
>a mystery to me why Tuch's article states otherwise, but if I can ever track
>down his email address, I intend to ask him.

Yep, it's 22 MHz. There's only one "channel" in the 915 MHz band. There are six
in the 2.4 GHz band, because it's bigger.

--Brett

114. Re: [SS:64] Re: WaveLAN vs. Breezecom

From: cip@roedu.net
Date: Wed, 23 Sep 1998 17:26:55 +0300 (EET DST)
To: ss@tapr.org
Message-ID: <13833.1052.778190.478207@romsys-sun.Bucharest.roedu.net>
Rendered body type: text/plain

> As I understand it, there is a faster Breezecom hopper, but its
 > stated range is 3000 feet. Also, remember: our schools are at
 > one end of the 2.4 GHz band. Breezecom's equipment, last time
 > I checked, used the WHOLE band; we couldn't restrict their
 > hoppers to keep them from potentially bringing down the schools.

We are using Breeezecom equipment for links as long as 15km.
The hopping sequence can be changed.

The data rate of the equipment is 3MBPS but the actual throughput is
around 1.8Mbps...

--

 Ciprian Cosma YO3GHC CC5980 CC467-RIPE
  cip@roedu.net   cip@pub.ro   cip@lbi.ro

"Whenever you find that you are on the side of the majority, it is time
to reform."   Mark Twain
----

115. Re: [SS:68] Re: Help! Small community network trying to deal

From: Bernard A Doehner <bad2@rfc.comm.harris.com>
Date: Wed, 23 Sep 1998 12:26:29 -0400 (EDT)
To: ss@tapr.org
Message-ID: <Pine.A32.3.90.980923122459.36658D-100000@fep01.rfc.comm.harris.com>
Rendered body type: text/plain

Baseband 11 MHz (chip rate)... Times two bandwidth expansion when you
heterodyne it to the transmission frequency...

Same thing that happens with a 3 KHz. audio signal when it is AM'ed (~6
khz transmitted BW).

73

Bernie nu1s/2

> While, I'm here, a correction on something I said earlier... I stated that
> the bandwidth of WaveLAN is 11 MHz. This is clearly stated several times in
> an article by Bruce Tuch, principle designer of WaveLAN, published in the
> AT&T Tech Journal in 1993. However, Bob Buaas told me he thought the bandwidth
> was actually 22 MHz, so I took a close look with a spectrum analyzer, and he
> was absolutely right. The spectrum has some minor nulls at +/- 5.5 MHz, but
> the main lobe of the signal is 22 MHz wide, null-to-null. This certainly
> explains why the 915 MHz WaveLANs have no choice of center frequency. :-) It's
> a mystery to me why Tuch's article states otherwise, but if I can ever track
> down his email address, I intend to ask him.
>
> -Barry
>
>
> --
>   Barry McLarnon VE3JF/VA3TCP | bm@hydra.carleton.ca
>   Ottawa Amateur Radio Club | bm@lynx.ve3jf.ampr.org
>   Packet Working Group | http://hydra.carleton.ca
>
>

116. Help! Small community network trying to (cover engineering goof?)

From: "George Flammer" <cto@g3m.com>
Date: Wed, 23 Sep 1998 10:21:08 -0700
To: <brett@lariat.org>
Cc: <ss@tapr.org>
Message-ID: <001701bde716$9027b4e0$d2e01fd1@gilligan.g3m.com>
Rendered body type: text/plain

Hello Brett,

Out here in Silicon Valley there are THOUSANDS of Metricom poletops with HUNDREDS within easy line of sight of each other as well as almost any well positioned antenna. The Metricom radios are FHSS (if memory serves) and do not coordinate their hopping channels (I think to do so would be a certification violation). They do not transmit when they have no data, so they are good neighbors in that regard. Additionally, if memory serves, the Metricom system was designed by Radio Amateurs well aware of and sympathetic to interference issues.

In the note from you on this reflector I saw mention of WaveLAN as representative of your worries. WaveLAN appears to be a wireless LAN solution not even designed to go "outdoors". It is a DSSS system: well designed for the multipath environment of indoor operation but ill-suited for dealing with interference from Hams, AVL systems, or even the occasional Metricom packet. That's why Metricom, TAPR, and most anyone thinking about outdoor operation is going with FHSS.

Broadband systems with minimal processing gain don't cut it in shared spectrum environments. As Don, wb9mjn, said so eloquently, "This experience is the usual problem when technology paired down to the commercially profitable, is used beyond its intent. If we wish to do such things, careful reengineering

of network architecture is a requirement.".

That statement is validated in that locally here in Silicon Valley there are hundreds of well designed DSSS systems operating amidst all the Metricom radios.

I thought this topic died half a decade ago... if memory serves.

You asked what you should do. I would double and triple check your system engineering to make sure it was designed to operate well within non-exclusive spectrum. This can be done and done well. Lariat appears to have no legitimate spectral complaint; everyone is playing by the rules that Lariat explicitly agreed to when they chose their Part 15.247 equipment. In fact, it may be that buying Internet coverage from KN Energy would be a much cheaper option for your "customers" as well as saving all of us some email bandwidth :-)

Hello to everyone else,
Regards to all,
-George w6mt

117. Re: [SS:70] Re: WaveLAN vs. Breezecom

From: Brett Glass <brett@lariat.org>
Date: Wed, 23 Sep 1998 12:50:39 -0600
To: ss@tapr.org
Message-ID: <199809231856.MAA25083@lariat.lariat.org>
Rendered body type: text/plain

Unfortunately, Breezecom tells me that while the sequence can be changed, it can't be made to avoid certain parts of the spectrum. Does your documentation say otherwise? Maybe we got a clueless tech support person.

--Brett

At 09:33 AM 9/23/98 -0500, cip@roedu.net wrote:

>We are using Breeezecom equipment for links as long as 15km.
>The hopping sequence can be changed.
>The data rate of the equipment is 3MBPS but the actual throughput is
>around 1.8Mbps...
>
>
>--
>
>--
> Ciprian Cosma YO3GHC CC5980 CC467-RIPE
> cip@roedu.net   cip@pub.ro   cip@lbi.ro
>
>"Whenever you find that you are on the side of the majority, it is time
>to reform."   Mark Twain
>--
>

118. No "engineering goof" here!

From: Brett Glass <brett@lariat.org>
Date: Wed, 23 Sep 1998 12:54:42 -0600
To: ss@tapr.org, cto@g3m.com
Message-ID: <199809231856.MAA25086@lariat.lariat.org>
Rendered body type: text/plain

It's not an engineering goof to expect to be able to share publicly available spectrum, or to choose the best equipment that's commercially available (which WaveLAN was, and arguably still is).

Incidentally, is this the George Flammer whose name appears on at least half a dozen Metricom patents?

--Brett Glass

119. No "engineering goofs" here!

From: Brett Glass <brett@lariat.org>
Date: Wed, 23 Sep 1998 13:12:32 -0600
To: "George Flammer" <cto@g3m.com>
Cc: <ss@tapr.org>
Message-ID: <199809231915.NAA25256@lariat.lariat.org>
Rendered body type: text/plain

At 10:21 AM 9/23/98 -0700, George Flammer wrote:

>
> Out here in Silicon Valley there are THOUSANDS of Metricom poletops with

> HUNDREDS within easy line of sight of each other as well as almost any well
> positioned antenna. The Metricom radios are FHSS (if memory serves) and do
> not coordinate their hopping channels (I think to do so would be a
> certification violation).

I believe that it would NOW, but only as of a 1997 rulemaking. We have no idea
how much
"grandfathered" Metricom equipment was manufactured and/or deployed before
that.

>
> They do not transmit when they have no data, so they are good neighbors in
> that regard.

According to a Metricom engineer to whom I spoke yesterday, they emit a
"heartbeat"
packet once a second.

>
> Additionally, if memory serves, the Metricom system was designed by Radio
> Amateurs well aware of and sympathetic to interference issues.

Hams would not need to worry about interference from the Metricom system,
because they
can use far more than the 1 watt of power that's allowed for Part 15
applications. The
Metricom system seems to be designed to use every tactic possible to plow
through
noise (where transmissions from other Part 15 equipment are regarded as
"noise"). In
other words, to avoid being interfered WITH rather than to avoid interfering
with others.

>
> In the note from you on this reflector I saw mention of WaveLAN as
> representative of your worries. WaveLAN appears to be a wireless LAN solution
> not even designed to go "outdoors". It is a DSSS system: well designed for
> the multipath environment of indoor operation but ill-suited for dealing with
> interference from Hams, AVL systems, or even the occasional Metricom packet.
> That's why Metricom, TAPR, and most anyone thinking about outdoor operation
> is going with FHSS.

Lucent recommends WaveLAN as an outdoor solution at ranges of up to 10 miles!
See

http://www.wavelan.com/solutions/

and

http://www.wavelan.com/products/productdetail.html?id=12

among other links.

So, it's being used for its intended AND RECOMMENDED purpose.

>
> That statement is validated in that locally here in Silicon Valley there are
> hundreds of well designed DSSS systems operating amidst all the Metricom
> radios.

WaveLAN is the best there is. One California school district, in fact, found
that it was not only better than all the other DSSS solutions they tried, but
also better than Breezecom's FHSS equipment. (This agrees with our experience.)
See

http://www.fsusd.k12.ca.us/WIRETEST.HTM

>
> You asked what you should do. I would double and triple check your system
> engineering to make sure it was designed to operate well within non-exclusive
> spectrum. This can be done and done well.

It was done; one of the most experienced wireless networking engineers in the
business, with 7 years of experience, helped to plan our network.

>
> Lariat appears to have no legitimate spectral complaint; everyone is playing
> by the rules that Lariat explicitly agreed to when they chose their Part
> 15.247 equipment.

We did not "explicitly" (or implicitly, for that matter) agree to any rule
which says
that someone else can take down our network by sheer force of number of
transmitters!

>
> In fact, it may be that buying Internet coverage from KN Energy would be a
> much cheaper option for your "customers" as well as saving all of us some
> email bandwidth :-)

Well, first of all, we don't have "customers;" we are a non-profit organization
with
members, and are not allowed to receive revenue other than gifts from anyone
who is
not a member. Second of all, K N Energy's services are insufficient to supply
the
needs of our members. Many run Web servers, and the Metricom system is far too
slow
for that and does not assign fixed IP numbers. The system that will drive ours
off
the air will not be able to replace it.... Our community will be badly hurt as
a
result.

--Brett Glass

120. Re: No "engineering goofs" here!

From: "George Flammer" <cto@g3m.com>
Date: Wed, 23 Sep 1998 15:16:07 -0700
To: "Brett Glass" <brett@lariat.org>
Cc: <ss@tapr.org>
Message-ID: <009101bde73f$c57188f0$d2e01fd1@gilligan.g3m.com>
Rendered body type: text/plain

Hi Brett, thanks for the prompt reply,

1) Re: FHSS hopping coordination. To my knowledge, no Metricom radio network
has *ever* coordinated hopping channels between radios. It was against the
intent of the original ruling and was clarified/codified subsequently. Check
your source.

2) Re: "Good Radio Neighbor". The 5mS heartbeat data packet (which is
targeted to other radios) maintains network synchronization over several
square kilometers at a cost of less than 0.005% spectral duty cycle. Even
the once a sec number might be high in a fully deployed network. Sending
synch data at that cost is more efficient than other techniques and thus
qualifies (to me) as a 'good radio neighbor'.

3) Re: Lucents recommendations for outdoor use of DSSS systems. Here's their
disclaimer:

        "*Lucent Technologies cannot guarantee any stated distances as the
terrain and environment will be different for every installation. The
maximum distance stated is based on perfect environmental conditions. The
typical distance is based on good environmental conditions".

I personally am surprised that they would make even such a recommendation,
but as mentioned, there *are* a lot of DSSS systems working in and around
installed FHSS systems. If their system, installed per their recommendations
doesn't perform to specifications you certainly have recourse with them.
Well designed networks can co-exist; what is Lucent doing to reassure you
that their equipment is engineered for urban outdoor WAN use? Get their
help, you're the customer!

4) Re: your network design, see item 3).

5) Re: explicitly accepting Part 15.247: The label on your equipment should
read, (clause 2) "This device must accept any interference received,
including interference that may cause undesired operation". If your Part

15.247 label doesn't, contact the manufacturer. It isn't optional and isn't intended to be ambiguous.

In summary, Part 15 equipment can be used to create low cost, flexible, high performance networks. Metricom, amongst others like yourself, is working to provide high value data services using unlicensed spectra. Your complaints appear aimed at preventing such a service being provided to the local citizenry so that a few, large organizations can continue to monopolize the Part 15.247 spectrum. Unfortunate and unnecessary given that, if well engineered, Lariat's network should suffer no adverse impact from fellow Part 15.247 occupants.

This forum is technical in nature and I have belatedly realized that this thread (whoops!) is political. I rose to the bait and offered several technical answers where none would be accepted and none were desired. I apologize to the list for the noise, so this will (thankfully) be my last note on the subject.

Thanks for your time,
-George
sk

121. Re: No "engineering goofs" here!

From: Brett Glass <brett@lariat.org>
Date: Wed, 23 Sep 1998 20:39:11 -0600
To: ss@tapr.org, "George Flammer" <cto@g3m.com>
Message-ID: <199809240241.UAA29155@lariat.lariat.org>
Rendered body type: text/plain

At 05:21 PM 9/23/98 -0500, George Flammer wrote:

>1) Re: FHSS hopping coordination. To my knowledge, no Metricom radio network
>has *ever* coordinated hopping channels between radios. It was against the
>intent of the original ruling and was clarified/codified subsequently. Check
>your source.

I've seen the 1997 ruling and the comments that led to it. One question, though: if monopolization of the band via coordinated hopping has been recognized by the FCC as undesirable, why should monopolization via the deployment of mass quantities of transmitters be allowed? This is a serious question. It seems to me that Metricom -- or anyone else, for that matter -- could use this as a loophole to take over the band.

>2) Re: "Good Radio Neighbor". The 5mS heartbeat data packet (which is
>targeted to other radios) maintains network synchronization over several
>square kilometers at a cost of less than 0.005% spectral duty cycle. Even
>the once a sec number might be high in a fully deployed network. Sending
>synch data at that cost is more efficient than other techniques and thus
>qualifies (to me) as a 'good radio neighbor'.

Again, an individual radio might seem like a "good neighbor," but when you have nearly a hundred of them in a small town the size of Laramie...? Suddenly, those packets begin to make a difference.

>3) Re: Lucents recommendations for outdoor use of DSSS systems. Here's their
>disclaimer:
>
>   "*Lucent Technologies cannot guarantee any stated distances as the
>terrain and environment will be different for every installation. The
>maximum distance stated is based on perfect environmental conditions. The
>typical distance is based on good environmental conditions".

Anyone would have to make this disclaimer, especially since licensed users and other Part 15 users could interfere somewhat. But the Metricom system appears to be a "pathological case" in that it throws a huge number of transmitters -- and, hence, a huge amount of aggregate power -- at other users of the band, whom the system sees as "interference" rather than as fellow users deserving of mutual respect.

>I personally am surprised that they would make even such a recommendation,
>but as mentioned, there *are* a lot of DSSS systems working in and around
>installed FHSS systems. If their system, installed per their recommendations
>doesn't perform to specifications you certainly have recourse with them.

It's performing to spec NOW. It will not perform to spec when the Ricochet system is deployed. NO spread spectrum system on the same band could!

>Well designed networks can co-exist; what is Lucent doing to reassure you
>that their equipment is engineered for urban outdoor WAN use? Get their

>help, you're the customer!

I've gotten their help. They essentially say that the problem is a "tragedy of the commons" situation. The analogy: A village has a "commons" -- a common meadow where each resident can graze his or her cow. But then, along comes one inconsiderate citizen who says, "Hmmm.... This looks like a good way to raise a lot of cattle without buying land. The commons are underutilized! I'll just bring in a whole herd of cattle and graze it there."

Of course, the commons is soon overgrazed, and the citizen who used the commons as intended -- that is, who grazed one or two animals -- is naturally upset. And the only rational answer is to limit the number of animals one can graze or the amount of grass they can consume. This is regulation, and it's annoying; however, what can one do? Without it, the commons are no longer commons; they've become one person's exclusive preserve.

Lucent is reluctant to tell me to boost our power from 250 mW to 1W (even though this was allowed by the same 1997 ruling), because they see this as nothing but escalation. Instead, they say to negotiate with K N Energy and Metricom -- which we are trying to do. We need constructive advice about how best to do this.

>4) Re: your network design, see item 3).

Again, designing a network to be more aggressive or use higher power isn't the answer. The answer is to share the spectrum in a reasonable way. Our nodes, according to Lucent, are compliant with the IEEE 802.11 standard, which helps systems from different vendors to share the spectrum gracefully. The Metricom system, alas, is not.

>5) Re: explicitly accepting Part 15.247: The label on your equipment should
>read, (clause 2) "This device must accept any interference received,
>including interference that may cause undesired operation". If your Part
>15.247 label doesn't, contact the manufacturer. It isn't optional and isn't
>intended to be ambiguous.

It's not ambiguous. The DEVICE must accept the interference. The owner, however....

>In summary, Part 15 equipment can be used to create low cost, flexible, high
>performance networks.

Agreed.

>Metricom, amongst others like yourself, is working to
>provide high value data services using unlicensed spectra.

We're not "providing services." We are working, as unpaid volunteers, to network our community for the benefit of everyone here. That's how the commons are supposed to work.

>Your complaints
>appear aimed at preventing such a service being provided to the local
>citizenry

No; in fact, if you've read our Web pages, you'll know that the charter of our group is, in fact, "to teach, promote, and facilitate the use of the Internet."

>so that a few, large organizations can continue to monopolize the
>Part 15.247 spectrum.

There ARE no large organizations in Laramie. We are a small community. And we have no desire for ANYONE to monopolize the Part 15 spectrum. However, one large, out-of-state corporation -- K N Energy -- is seeking to monopolize that spectrum to the detriment of the community.

>Unfortunate and unnecessary given that, if well
>engineered, Lariat's network should suffer no adverse impact from fellow
>Part 15.247 occupants.

We have suffered no adverse impact from other Part 15 occupants, but WILL suffer from K N Energy's deployment of the Ricochet system if it is allowed to occur. No design we can come up with will help. Directional antennas? As mentioned before, the Metricom system is a grid; there will likely be one or more Metricom transmitters in the front and back lobes of every one. (Also, we must use omnis at some locations.) Higher power? We can only push things to the one watt limit. There's no engineering

magic here; our nodes will be surrounded and outnumbered.

>This forum is technical in nature and I have belatedly realized that this
>thread (whoops!) is political.

It is, in part, political; however, it admits itself to technical solutions.
In particular, it should be possible to amend Part 15 further -- as was
done with regard to frequency hopping coordination -- to limit the aggregate
power of a large number of transmitters deployed as part of the same network.
Sort of the equivalent of saying that you can only graze so many cattle
or sheep on the commons.

I'd invite suggestions for how such restrictions could be implemented fairly,
as I would like to submit them to the FCC for proposed rule making.

--Brett Glass

122. Re: [SS:71] Re: Help! Small community network trying to deal

From: bm@lynx.ve3jf.ampr.org
Date: Wed, 23 Sep 1998 22:56:18 -0400 (EDT)
To: ss@tapr.org
Message-ID: <199809240256.WAA30571@lynx.ve3jf.ampr.org>
Rendered body type: text/plain

Bernard A Doehner <bad2@rfc.comm.harris.com> wrote:
> Baseband 11 MHz (chip rate)... Times two bandwidth expansion when you
> heterodyne it to the transmission frequency...
>
> Same thing that happens with a 3 KHz. audio signal when it is AM'ed (~6
> khz transmitted BW).

Elementary. But the Tuch article says "the main lobe is quite compact, with
first zero at 5.5 MHz", and refers in several places to using 11 MHz of RF
(not baseband) bandwidth. Go figure. Of particular interest is this
concluding remark: "WaveLAN, using 11 MHz of bandwidth, achieves a 2 Mbps
raw data rate for indoor operation". Leaving aside the discrepancy about the
bandwidth, it's pretty clear that WaveLAN was designed for indoor applications.
Of course, people soon learned that they could be used outdoors as wireless
bridges, but WaveLAN is ill-equipped to deal with the nasty quagmire of signals
that populate the two UHF ISM bands.

Barry

--
  Barry McLarnon VE3JF/VA3TCP | bm@hydra.carleton.ca
  Ottawa Amateur Radio Club | bm@lynx.ve3jf.ampr.org
  Packet Working Group | http://hydra.carleton.ca

123. Re: [SS:69] Re: Help! Small community network trying to deal

From: bm@lynx.ve3jf.ampr.org
Date: Wed, 23 Sep 1998 23:11:07 -0400 (EDT)
To: ss@tapr.org
Message-ID: <199809240311.XAA31580@lynx.ve3jf.ampr.org>
Rendered body type: text/plain

Brett Glass <brett@lariat.org> wrote:
> Well, we've got some indications that there may be problems at higher levels, too.
> You see, the Metricom transmitters are laid out in a grid. No matter which way
> you point a directional antenna on a rooftop (it's not so bad at ground level),
> you're likely to get at least one of their transmitters in the front lobe and
> one in the back. Maybe more.

Use antennas with higher directivity and better f/b ratio, cross-polarized to the
Metricom systems. For the cases (hopefully a minority) where you still can't get
Metricom outta your face, use a 2.4 GHz product instead.

By all means pursue a political solution if you think it will get you anywhere,
but this is not the proper forum in which to beat that particular drum - we're
here to talk about the technical aspects of spread spectrum communications.

Barry (AKA TAPR SS list maintainer/moderator/whatever)

--
  Barry McLarnon VE3JF/VA3TCP | bm@hydra.carleton.ca
  Ottawa Amateur Radio Club | bm@lynx.ve3jf.ampr.org
  Packet Working Group | http://hydra.carleton.ca

124. PRUG Demo at DCC

From: "Greg Jones, WD5IVD" <wd5ivd@tapr.org>
Date: Wed, 23 Sep 1998 22:36:15 -0500
To: " Spread Spectrum "<ss@tapr.org>
Message-ID: <v04011712b22f6e47693a@[207.43.172.70]>
Rendered body type: text/plain

PRUG will be demoing their 2.4G radio they talked about last year at the
upcoming DCC for those attending. It is rumored that they have a dozen of
the radios in testing back home.

Should be an interesting Friday Night social and PRUG presentation.

See those attending Friday!

Cheers - Greg

Greg Jones, WD5IVD   Austin, Texas
wd5ivd@tapr.org   http://www.tapr.org/~wd5ivd

125. Re: [SS:78] Re: Help! Small community network trying to deal

From: Brett Glass <brett@lariat.org>
Date: Wed, 23 Sep 1998 21:41:56 -0600
To: ss@tapr.org, ss@tapr.org
Message-ID: <199809240344.VAA29585@lariat.lariat.org>
Rendered body type: text/plain

At 10:00 PM 9/23/98 -0500, bm@lynx.ve3jf.ampr.org wrote:

>Leaving aside the discrepancy about the
>bandwidth, it's pretty clear that WaveLAN was designed for indoor applications.

I've looked at all the historical data on WaveLAN I can find, and I find no
indication that it was specifically designed for either indoor or outdoor
applications. It *was* designed for high throughput -- much more so than
other systems available at the time.

>Of course, people soon learned that they could be used outdoors as wireless
>bridges, but WaveLAN is ill-equipped to deal with the nasty quagmire of signals
>that populate the two UHF ISM bands.

It works fine for us! The Metricom system is only an issue because it saturates
the band with hoppers, all broadcasting at the legal power limit.

See

http://www.fsusd.k12.ca.us/WIRETEST.HTM

for a good apples-to-apples comparison of WaveLAN vs. other technologies for
outdoor use.

--Brett

126. Technical additions to Part 15?

From: Brett Glass <brett@lariat.org>
Date: Wed, 23 Sep 1998 21:48:03 -0600
To: ss@tapr.org
Message-ID: <199809240350.VAA29625@lariat.lariat.org>
Rendered body type: text/plain

At 10:13 PM 9/23/98 -0500, bm@lynx.ve3jf.ampr.org wrote:

>Use antennas with higher directivity and better f/b ratio, cross-polarized
>to the Metricom systems.

What do we do about the fact that, because the Metricom system is laid
out in a grid, there's almost certain to be one of their nodes in the
front lobe no matter what?

>For the cases (hopefully a minority) where you still can't get
>Metricom outta your face, use a 2.4 GHz product instead.

We'd have a couple of minor problems doing this. First of all, we put the
school district on the lower half of 2.4; we sure don't want to interfere
with them! Also, there's a matter of money.... Buying 2.4 GHz cards, plus new
antennas, could be quite expensive. And 2.4 GHz performs badly in the presence
of trees, of which there are a few in the area. (It's one of the reasons we
picked 915 MHz.)

>By all means pursue a political solution if you think it will get you anywhere,
>but this is not the proper forum in which to beat that particular drum - we're
>here to talk about the technical aspects of spread spectrum communications.

Understood.... However, the two do converge at the point where the Part 15
rules are made. And one of the things we're interested in doing is proposing
rule making that would help systems to coexist more easily and prevent one
user from taking over the band. What TECHNICAL constraints would you propose
to prevent a system like the Metricom Ricochet system from squashing other
networks? (Let's ignore, for the moment, the POLITICAL difficulty of getting
such rules made.)

--Brett Glass

127. Re: [SS:77] Re: No "engineering goofs" here!

From: bm@lynx.ve3jf.ampr.org
Date: Thu, 24 Sep 1998 00:05:13 -0400 (EDT)
To: ss@tapr.org
Message-ID: <199809240405.AAA03321@lynx.ve3jf.ampr.org>
Rendered body type: text/plain

Brett Glass <brett@lariat.org> wrote:
> It's performing to spec NOW. It will not perform to spec when the Ricochet
> system is deployed. NO spread spectrum system on the same band could!

If you qualified that statement by saying that no point-to-multipoint 2 Mbps
spread spectrum system could, I'd agree with you. Fact of life in the ISM
bands: as the level of crud goes up, you have to lower your expectations
about achieving high throughput over long distances. Case in point: here in
Ottawa there is an amateur TV repeater that transmits 24 hours a day. It eats
up a 10 MHz chunk of the band centered at 916 MHz, and it runs several *kilowatts*
ERP. Ghastly waste of spectrum, but perfectly legal. If the local hams in
Laramie put up one of those in the middle of town, you'd be dead in the water.
Even with cross-polarized high gain antennas, you can't fight that kind of
interference power with WaveLAN. I know - I tried. I ended up selling my
915 MHz WaveLAN cards to some folks who are using them quite happily for
short-range links between adjacent apartment buildings. Even the more robust
lower bitrate products like Metricom would have problems in the vicinity of
this repeater, but they wouldn't be as hopeless as WaveLAN is. Such is life
when you're using "free" spectrum...

Barry

--
  Barry McLarnon VE3JF/VA3TCP | bm@hydra.carleton.ca
  Ottawa Amateur Radio Club | bm@lynx.ve3jf.ampr.org
  Packet Working Group | http://hydra.carleton.ca

128. Re: [SS:45] RE: 32] Re: SS on HF

From: "Bobbie Johnson" <bobbiej@vnet.net>
Date: Thu, 24 Sep 1998 01:04:52 -0400
To: <ss@tapr.org>
Message-ID: <002401bde778$dddbc020$309152a6@server1>
Rendered body type: text/plain

First I have heard of it and I have been a member of both for more than 30
years.

Bobbie   KD4LV

-----Original Message-----
From: Lanier, Robert <rlanier@harris.com>
To: ss@tapr.org <ss@tapr.org>
Date: Monday, September 21, 1998 9:10 AM
Subject: [SS:45] RE: 32] Re: SS on HF

>What does church and the Southern Baptists have to do with ham radio?
>
> -----Original Message-----
> From: ss@tapr.org [SMTP:ss@tapr.org]
> Sent: Saturday, September 19, 1998 3:57 PM
> To: ss@tapr.org
> Subject: [SS:32] Re: SS on HF
>
> Listening for the military stuff I used to be part of 10 years ago, I
> find that almost all of it is gone. Since we were using more and
> more satellite gear, and JTIDS, I think spectrum is available, and

> if we don't apply for it, the Church will. I'd rather see more
> HF for Hams, then HF for churches. They've already taken over
> the AM broadcast band. We may be better off going to the
> Southern Baptists for spectrum, rather than the ARRL??
>
> The other option is to take over the Novice bands, but keep the
> power limit. Since there will be no more Novices (I hope) there
> is no more need for the CW allocation. There's sufficient CW
> spectrum on HF. 15 meters and 21.1 to 21.2 is a good
> candidate. The 50 kHz on 40 meters is another, and 3.5 to
> 3.6 MHz on 80 is another. 10 meters is so unused, I mostly
> hear CB radio ops going on locally, as there is no Ham
> activity.
>
> I think HF is one of those areas where intelligent hoppers
> can be deployed. A good application, would be internet
> or VHF/UHF connections, where radios can use band activity
> from all over the US to map frequencies from. My radio could
> take the data from another radio in town over UHF or the
> internet, to determine the next 10 hopping frequencies, or
> a code that selects the next band to hop to. Something
> that can't be done locally, as the mapping receiver would
> be overpowered. Another idea is a common channel on HF
> using FSK to distribute hopping data. Very low baud rates
> needed.
>
> I don't think each radio must operate as a single
> entity, but with technology today, could work in a
> LAN or WAN type network.
>
> We can't do anything if the Church takes over, or 10
> moonbounce operators control the HF spectrum.
>
> Time to move on and clean up the rules. We're not
> going to be able to do anything unless they are modified.
> The STA route is a dead end. People spend more time
> shuffling paper than burning solder, or writing code.
>
> Steve
>
>

129. Re: [SS:73] Re: WaveLAN vs. Breezecom

From: cip@roedu.net
Date: Thu, 24 Sep 1998 10:39:18 +0300 (EET DST)
To: ss@tapr.org
Message-ID: <13833.63035.820383.502256@romsys-sun.Bucharest.roedu.net>
Rendered body type: text/plain

> Unfortunately, Breezecom tells me that while the sequence can be
 > changed, it can't be made to avoid certain parts of the spectrum.
 > Does your documentation say otherwise? Maybe we got a clueless
 > tech support person.
 >
You can define whatever hopping sequence you like (I don't know if
this is OK with the FCC).

But to do this you must have a Technician password for your modem...

 Ciprian Cosma YO3GHC CC5980 CC467-RIPE
  cip@roedu.net   cip@pub.ro   cip@lbi.ro

"Whenever you find that you are on the side of the majority, it is time
to reform."   Mark Twain
---

130. Re: WaveLAN vs. Breezecom

From: Ronen Pinchook <ronen@netmanage.co.il>
Date: Thu, 24 Sep 1998 10:26:09 -0000
To: "'ss@tapr.org'" <ss@tapr.org>
Cc: "'tidhar@netvision.net'" <tidhar@netvision.net>,
        "'nir.m@mail.com'"
 <nir.m@mail.com>
Message-ID: <01BDE7A5.C268F380@ronen.netmanage.co.il>
Rendered body type: text/plain

I saw your equation in Breezecom vs other WLans at

http://www.fsusd.k12.ca.us/WIRETEST.HTM

I have a radio Link here with Breezecom and I get a 1MB Through put without a problems

However BreezeCom is an expensive line and I suggets you to look at the following

http://www.proxim.com/symphony/products/#isa

They have a Card with about the same spec but cost only 150$

Ronen

131. Re: [SS:82] Technical additions to Part 15?

From: bm@lynx.ve3jf.ampr.org
Date: Thu, 24 Sep 1998 10:06:08 -0400 (EDT)
To: ss@tapr.org
Message-ID: <199809241406.KAA18949@lynx.ve3jf.ampr.org>
Rendered body type: text/plain

Brett Glass <brett@lariat.org> wrote:
> >Use antennas with higher directivity and better f/b ratio, cross-polarized
> >to the Metricom systems.
>
> What do we do about the fact that, because the Metricom system is laid
> out in a grid, there's almost certain to be one of their nodes in the
> front lobe no matter what?

Well, you do have your 10 dB of processing gain, plus maybe 20 dB of discrimination due to cross-polarization, plus presumably higher ERP due to using directional antennas (where needed, you could bring your ERP up to the 36 dBm max using yagis with [12 dBi + line loss] gain). So, you would have a fighting chance except in those cases where the Metricom unit is much closer than the other end of your link. If your current links are running with zero margin, you've got your work cut out for you, but hopefully that's not the case. In really tough cases, you might have to give up on 2 Mbps and use a lower bitrate product (e.g., FreeWave) that can bust through the crud.

> >For the cases (hopefully a minority) where you still can't get
> >Metricom outta your face, use a 2.4 GHz product instead.
>
> We'd have a couple of minor problems doing this. First of all, we put the
> school district on the lower half of 2.4; we sure don't want to interfere
> with them! Also, there's a matter of money.... Buying 2.4 GHz cards, plus new
> antennas, could be quite expensive. And 2.4 GHz performs badly in the presence
> of trees, of which there are a few in the area. (It's one of the reasons we
> picked 915 MHz.)

True about the trees, but the difference isn't huge unless you're talking pretty thick forest... and high-gain antennas for 2.4 GHz are cheap. Although you might have to replace 915 MHz equipment with 2.4 GHz in some cases, you could probably find areas in which the 915 MHz gear could be reused.

> >By all means pursue a political solution if you think it will get you anywhere,
> >but this is not the proper forum in which to beat that particular drum - we're
> >here to talk about the technical aspects of spread spectrum communications.
>
> Understood.... However, the two do converge at the point where the Part 15
> rules are made. And one of the things we're interested in doing is proposing
> rule making that would help systems to coexist more easily and prevent one
> user from taking over the band. What TECHNICAL constraints would you propose
> to prevent a system like the Metricom Ricochet system from squashing other
> networks? (Let's ignore, for the moment, the POLITICAL difficulty of getting
> such rules made.)

I frankly don't think you'll have much luck trying to kick Metricom off the band. They've chosen to use it to provide a ubiquitous service at landline bitrates to roaming users. You want to use it to provide near-T1 rates in point-to-point or point-to-multipoint service. Who's to say that one use is more valid than the other? Metricom's service is probably closer to what the architects of Part 15 visualized for wireless LAN service, although they may not have anticipated doing it on that scale. :-) Such usage definitely makes life more difficult for you, but it need not put you out of the wireless game. You will have to use some creative engineering, and treat each link as a special case.

Barry

--
Barry McLarnon VE3JF/VA3TCP | bm@hydra.carleton.ca

```
  Ottawa Amateur Radio Club      |  bm@lynx.ve3jf.ampr.org
  Packet Working Group           |  http://hydra.carleton.ca
```

132. Re: [SS:79] Re: Help! Small community network trying to deal

From: Jeff King <jeff@aerodata.net>
Date: Thu, 24 Sep 1998 10:12:50 -0400
To: ss@tapr.org
Message-ID: <3.0.5.32.19980924101250.00a573f0@aerodata.net>
Rendered body type: text/plain

At 10:13 PM 9/23/98 -0500, bm@lynx.ve3jf.ampr.org wrote:
>Brett Glass <brett@lariat.org> wrote:
>> Well, we've got some indications that there may be problems at higher
levels, too.
>> You see, the Metricom transmitters are laid out in a grid. No matter
which way
>> you point a directional antenna on a rooftop (it's not so bad at ground
level),
>> you're likely to get at least one of their transmitters in the front
lobe and
>> one in the back. Maybe more.
>
>Use antennas with higher directivity and better f/b ratio, cross-polarized
to the
>Metricom systems. For the cases (hopefully a minority) where you still
can't get
>Metricom outta your face, use a 2.4 GHz product instead.

I've heard Metricom is either testing or started using 2.4 ghz for backbones between there poletop units. Maybe someone more in the know can confirm or deny this. In any case, they certainly could start using it with the same tactics they used in the 900mhz deployment.

>
>By all means pursue a political solution if you think it will get you
anywhere,
>but this is not the proper forum in which to beat that particular drum -
we're
>here to talk about the technical aspects of spread spectrum communications.
>
>Barry (AKA TAPR SS list maintainer/moderator/whatever)

Well, what is the proper forum? If I don't like the messages, I don't read them. I have to admit, I didn't like Brett's tone at all when he started this discussion. But what he said got me to thinking and it DOES affect amateur radio operators.

That is, the intent and spirit of the part 15 rules. I believe Brett is stating that Metrocom is not keeping in the spirt of the part 15 rules by deploying large numbers of COORDINATED transmitters (each legal under part 15). Remember that most (all) part 15 transmitters until Metrocom operated in a anarchical fashion. Consequently, there overall impact on other users was minimized and localized.

To the RF folks out there.... what would have more impact on operations on a band, one 1000 watt transmitter on a 200 foot building or 1000 one watt transmitters (legal part 15) spread over the same "footprint" the 200 foot building could see? Most amateurs might guess the 1000 watt transmitter but in radio as in nuclear war, 1000 one kiloton (watt) nuclear weapons (transmitters) can cause more damage (interference) then one megaton (1000 watt) nuclear weapon (transmitter). We as amateurs might as well
write off the shared Part 97/15 bands if this continues.

"use a 2.4 GHz product instead" is not a long term solution when faced with a adversary like this that clearly ignores the (unwritten) spirit of the law. What Brett may want to focus on is to explore the "spirit" of the Part 15 rules and then get them written into law. A tough battle but one I think we as hams should support as it only is in our best interest.

-Jeff wb8wka


```
-----------------------------------
| Jeff King      Aero Data Systems |
| jeff@mich.com  P.O. Box 510895   |
| (248)471-1787  Livonia, MI 48151 |
```

```
|F(248)471-0279  United States     |
-------------------------------------
```

133. Re: [SS:83] Re: No "engineering goofs" here!

From: Brett Glass <brett@lariat.org>
Date: Thu, 24 Sep 1998 09:08:57 -0600
To: ss@tapr.org
Message-ID: <199809241521.JAA03165@lariat.lariat.org>
Rendered body type: text/plain

At 11:07 PM 9/23/98 -0500, bm@lynx.ve3jf.ampr.org wrote:

>Brett Glass <brett@lariat.org> wrote:
>> It's performing to spec NOW. It will not perform to spec when the Ricochet
>> system is deployed. NO spread spectrum system on the same band could!
>
>If you qualified that statement by saying that no point-to-multipoint 2 Mbps
>spread spectrum system could, I'd agree with you.

Yep, that's what I'm saying. We CAN'T slow down to Metricom's 28.8 Kbps;
we are running Web servers, multimedia, etc.

>Fact of life in the ISM
>bands: as the level of crud goes up, you have to lower your expectations
>about achieving high throughput over long distances.

We are talking about a city that's 2 miles by 4 miles; that's all! And
the hub is at the center. This is considerably less than the rated range
of WaveLAN.

>Case in point: here in
>Ottawa there is an amateur TV repeater that transmits 24 hours a day. It
eats
>up a 10 MHz chunk of the band centered at 916 MHz, and it runs several
>*kilowatts*
>ERP. Ghastly waste of spectrum, but perfectly legal. If the local hams in
>Laramie put up one of those in the middle of town, you'd be dead in the
water.
>Even with cross-polarized high gain antennas, you can't fight that kind of
>interference power with WaveLAN.

Or with Metricom. Both would be QRMed right off the band; sort of "reverse
TVI."

>Such is life when you're using "free" spectrum...

Well, we don't even have a MEANS of using non-free spectrum. Just try to call
up Lucent, or Breezecom, or any other vendor of spread spectrum digital radios
and ask them if they can adapt their equipment to licensed spectrum. You'll
get a pause, be transferred to tech support, and be told, "What is it that you
want? We've never been asked that before."

Metricom DOES have the ability to adapt its equipment to licensed spectrum,
since it makes its own.

--Brett

134. Ethernet Bridge?

From: Chris Brandt <cbbrandt@gci.net>
Date: Thu, 24 Sep 1998 08:22:03 -0800
To: "ss@tapr.org" <ss@tapr.org>
Message-ID: <360A71AB.705FEC8B@gci.net>
Rendered body type: text/plain

Does anyone have suggestion on a cheap ethernet bridge. Or a way that I
could give another buddy access to my home network? He lives about 3
miles as the crow flies away from me. I have a cable modem and want to
share some of my bandwidth with him through one of my available port on
my five port hub.

Chris Brandt WL7NG

135. Re: [SS:90] Ethernet Bridge?

From: John Koster <w9ddd@tapr.org>
Date: Thu, 24 Sep 1998 14:14:38 -0500 (CDT)
To: ss@tapr.org
Message-ID: <Pine.BSI.3.95.980924140333.20950A-100000@tapr.org>
Rendered body type: text/plain

It sounds like you are wanting to do in effect is have multiple PCs on the one cable modem. The problem being you only get one IP address assigned by the cable system (probably on a dynamic basis). I haven't done it yet, but I was planning on using an old 386 with Linux to allow the other 4 PCs in the house access. I haven't signed up for the cable modem service yet because they don't have dial up as an alternative, so I would still have to keep the dialup ISP for when I travel (which is a lot). They have a nice economic analysis which shows it isn't all that much more expensive than dial up. Howver it assumes you dump your ISP and the 2nd phone line you theoretically got just for the internet.

I have a little web server running at the house right now that is a 386SX40 with 16MB of ram and an 8MB Hard Drive. I see no reason that it won't work as a router/IPmasking/bridge, whatever and intend to start setting it up that way shortly for testing. Perhaps by the time I get it set up, the cable people will have figured out how to give me dialup as part of the package. Then if I can convince them to give me a static IP.....

John Koster, W9DDD
<w9ddd@tapr.org>

On Thu, 24 Sep 1998, Chris Brandt wrote:

> Does anyone have suggestion on a cheap ethernet bridge. Or a way that I
> could give another buddy access to my home network? He lives about 3
> miles as the crow flies away from me. I have a cable modem and want to
> share some of my bandwidth with him through one of my available port on
> my five port hub.
>   Chris Brandt WL7NG
>
>

136. Re: [SS:90] Ethernet Bridge?

From: Pinchook Ronen <ronen@ronen.netmanage.co.il>
Date: Thu, 24 Sep 98 21:41:49 EDT
To: ss@tapr.org
Message-ID: <289196@ronen.netmanage.co.il>
Rendered body type: text/plain

look at www.proxim.co/symphony

--------***********----------*********------*******
 Home of Chameleon , TCP/IP applications for Windows
Ronen Pinchook (4Z4ZQ)   Phone: 972-4-8550123
NetManage Israel, Ltd.   Fax: 972-4-8550122
E-Mail: ronen@netmanage.co.il
********-----------*********----------******-------

137. Re: [SS:88] Re: Help! Small community network trying to deal

From: Steve Sampson <ssampson@usa-site.net>
Date: Thu, 24 Sep 1998 14:42:39 -0500 (CDT)
To: ss@tapr.org
Message-ID: <199809241942.OAA07109@access.usa-site.net>
Rendered body type: text/plain

Hams could end this nonsense by deploying beacons across
the band and using morse code at 5 WPM at 10 Watts.
Metricom would go under, and then the band would be cleaned out.

Just an idea...

Steve

138. Re: [SS:91] Re: Ethernet Bridge?

From: Eric Glover <compuman@eecs.umich.edu>
Date: Thu, 24 Sep 1998 15:44:23 -0400 (EDT)
To: ss@tapr.org
Message-ID: <Pine.GSO.4.04.9809241538110.17560-100000@vulture.eecs.umich.edu>
Rendered body type: text/plain

Regarding doing some form of net sharing:

I actually HAVE a cable modem from MediaOne. Just like ADSL from Ameritech, cablemodems from MediaOne (at least the one-ways) require you to have W95. Even though things can work fine from Linux, the companies sort of refuse to give support if you are not running W95. Given this we can't run IP Masquerading since the W95 TCP stack (even OS/R2) is crap.

So what we did is ran a proxy server, the one I use is WinGate. It works
fine, is trivial to install, and supports just about everything I wanted.
If you run ssh through the proxy (or VNC viewer) you can even run
encrypted X sessions right through the proxy.

If we could run Linux as the gateway (which we plan on doing) we would be
using IP masquerading.

There are several proxy server programs (NOT written by Microsoft) for
Windoze 95 which actually work, and are easy to use.

Using Wingate I have been able to share with several machines
simulatenously Web, telnet, ftp, ssh, realaudio, etc...heck I even got it
to run Starcraft to battlenet! also, if you get sockscap 32 you can run
applications which don't know what a proxy is through the proxy server.

If you have any questions please ask!

If you can run Linux, then by all means do it, although I suspect a 386
might be a little underpowered to do IP masqerading for a cablemodem,
which can give you several megabits/second of data..A 486/50 was fine for
IP masquerading to share a single dial-in 28.8, but for more, I don't
know...We are going to try it with a cyrix pr120 in like a week or so.

- -
...an enormous body of information science literature is based on work
that *uses* relevance, without throughly understanding what it
means ... without an understanding of what relevance means *to*
users, it seems difficult to imagine how a system can retrieve relevant
information *for* users. -- Schamber, 1990
- -
                  Eric Glover -- compuman@eecs.umich.edu
             Grad student hoping to finish before the year 2000!

On Thu, 24 Sep 1998, John Koster wrote:

> It sounds like you are wanting to do in effect is have multiple PCs on the
> one cable modem. The problem being you only get one IP address assigned
> by the cable system (probably on a dynamic basis). I haven't done it yet,
> but I was planning on using an old 386 with Linux to allow the other 4 PCs
> in the house access. I haven't signed up for the cable modem service yet
> because they don't have dial up as an alternative, so I would still have
> to keep the dialup ISP for when I travel (which is a lot). They have a
> nice economic analysis which shows it isn't all that much more expensive
> than dial up. Howver it assumes you dump your ISP and the 2nd phone line
> you theoretically got just for the internet.
>
> I have a little web server running at the house right now that is a
> 386SX40 with 16MB of ram and an 8MB Hard Drive. I see no reason that it
> won't work as a router/IPmasking/bridge, whatever and intend to start
> setting it up that way shortly for testing. Perhaps by the time I get it
> set up, the cable people will have figured out how to give me dialup as
> part of the package. Then if I can convince them to give me a static
> IP........
>
> John Koster, W9DDD
> <w9ddd@tapr.org>
>
> On Thu, 24 Sep 1998, Chris Brandt wrote:
>
> > Does anyone have suggestion on a cheap ethernet bridge. Or a way that I
> > could give another buddy access to my home network? He lives about 3
> > miles as the crow flies away from me. I have a cable modem and want to
> > share some of my bandwidth with him through one of my available port on
> > my five port hub.
> >   Chris Brandt WL7NG
> >
> >
>
>

139. Re: [SS:90] Ethernet Bridge?

From: Steve Sampson <ssampson@usa-site.net>
Date: Thu, 24 Sep 1998 14:47:37 -0500 (CDT)
To: ss@tapr.org
Message-ID: <199809241947.OAA07136@access.usa-site.net>
Rendered body type: text/plain

You might look into proxim's new Symphony product line at

        http://www.proxim.com

They aren't shipping yet (although their web page is
taking orders), but the prices seem reasonable.

About $150 a node, but Microsoft OS only.

Steve

>
> Does anyone have suggestion on a cheap ethernet bridge. Or a way that I
> could give another buddy access to my home network? He lives about 3
> miles as the crow flies away from me. I have a cable modem and want to
> share some of my bandwidth with him through one of my available port on
> my five port hub.
>   Chris Brandt WL7NG
>

140. Re: [SS:91] Re: Ethernet Bridge?

From: Steve Wilson <stevew@eng.adaptec.com>
Date: Thu, 24 Sep 1998 13:05:38 -0700
To: ss@tapr.org
Message-ID: <360AA612.9FB33EFC@eng.adaptec.com>
Rendered body type: text/plain

John Koster wrote:
>
> It sounds like you are wanting to do in effect is have multiple PCs on the
> one cable modem. The problem being you only get one IP address assigned
> by the cable system (probably on a dynamic basis). I haven't done it yet,
> but I was planning on using an old 386 with Linux to allow the other 4 PCs
> in the house access. I haven't signed up for the cable modem service yet
> because they don't have dial up as an alternative, so I would still have
> to keep the dialup ISP for when I travel (which is a lot). They have a
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> than dial up. Howver it assumes you dump your ISP and the 2nd phone line
> you theoretically got just for the internet.
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> 386SX40 with 16MB of ram and an 8MB Hard Drive. I see no reason that it
> won't work as a router/IPmasking/bridge, whatever and intend to start
> setting it up that way shortly for testing. Perhaps by the time I get it
> set up, the cable people will have figured out how to give me dialup as
> part of the package. Then if I can convince them to give me a static
> IP........
>
> John Koster, W9DDD
> <w9ddd@tapr.org>
>
> On Thu, 24 Sep 1998, Chris Brandt wrote:
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> > miles as the crow flies away from me. I have a cable modem and want to
> > share some of my bandwidth with him through one of my available port on
> > my five port hub.
> >   Chris Brandt WL7NG
> >
> >

Been there - done that. The 386 is more than sufficient to be used in
this
way. There is a cable modem FAQ running around in the linux world you
might
both want to referrence.

As for the Cable modem ISP providing dial-up service - that one is a
rare instance.
Some provide the ability to pick up your email from outside their domain
- but that
is about it in my experience.
--
Steve Wilson KA6S
aka stevew@home.com

141. Re: [SS:88] Re: Help! Small community network trying to deal

From: Dewayne Hendricks <dewayne@warpspeed.com>
Date: Thu, 24 Sep 1998 13:09:54 -0700
To: ss@tapr.org
Message-ID: <v04101a02b230574cf450@[204.118.182.22]>
Rendered body type: text/plain

At 9:17 -0500 9/24/98, Jeff King wrote:
>
>I've heard Metricom is either testing or started using 2.4 ghz for backbones
>between there poletop units. Maybe someone more in the know can confirm or
>deny this. In any case, they certainly could start using it with the same
>tactics they used in the 900mhz deployment.

This is true. They just put out a press release to this effect yesterday. It part of their new ISDN speed 'Autobahn' service that is being tested in the SF Bay Area and is scheduled to be rolled out in mid-'99.

-- Dewayne
--
~~~~~~
Dewayne Hendricks, WA8DZP ! Internet: dewayne@warpspeed.com
Warp Speed Imagineering ! Packet Radio: WA8DZP @ K3MC.#NOCAL.CA.USA.NOAM
43730 Vista Del Mar ! WWW: <http://www.warpspeed.com/>
Fremont, CA 94539-3204 !
Fax: (510) 770-9854 !
~~~~~~

142. Re: [SS:90] Ethernet Bridge?

From: Clint Miller <cmiller@infinop.com>
Date: Thu, 24 Sep 1998 16:18:41 -0500
To: ss@tapr.org
Message-ID: <360AB731.9C5CED04@infinop.com>
Rendered body type: text/plain

For more IP addresses:
Look at pg 20 of the June '98 issue of the Linux Journal. IP masquerading is the ticket. I use it extensively with dynamic IP assignment to our ISP and it works flawlessly.

For connectivity to your friend:
I'm sure others on this list can help you with the physical link. I have no direct experience with this (yet). I would be tempted to configure an ethernet bridge in the same linux machine that would run the IP masquerading firewall.
--
Clint Miller - KD5BYY http://www.infinop.com/
Infinop, Inc. mailto:cmiller@infinop.com
3401 E. University #104 voice:940.484.1165/fax:0586
Denton, TX 76208

143. Re: Ethernet Bridge

From: James Jefferson <kb0thn@qsl.net>
Date: Thu, 24 Sep 1998 17:28:09 -0500
To: ss@tapr.org
Message-ID: <3.0.5.32.19980924172809.00803430@qsl.net>
Rendered body type: text/plain

>If you can run Linux, then by all means do it, although I suspect a 386
>might be a little underpowered to do IP masqerading for a cablemodem,
>which can give you several megabits/second of data..A 486/50 was fine for
>IP masquerading to share a single dial-in 28.8, but for more, I don't
>know...We are going to try it with a cyrix pr120 in like a week or so.

I've personally masked normal 10 megabit ethernet through a 386 16MHz with 4 megs of ram - not a problem in the least. The IP_MASQ creates very little overhead. Take a look at Phil Karn's cablemodem information as well as the various linux howtos.

See ya all at DCC tommrow,

144. Re: Ethernet Bridge?

From: Chris Brandt <cbbrandt@gci.net>
Date: Thu, 24 Sep 1998 21:41:40 -0800
To: "ss@tapr.org" <ss@tapr.org>
Message-ID: <360B2D14.121CA027@gci.net>
Rendered body type: text/plain

John,
        I work for the cable system that I got the modem from. In our system we use Com21 external modems. You can hook up as many computers as you want to your hub and they all get there own IP. Our system uses a semi static IP system. I.E. it will hold the IP assigned to the NIC card for up to 5 days, updating the time every time you log on to the system. So in essence you have a static IP. I leave one of my computers on all the time, so I have had the same IP for the last 5 months. The Com21's plug into the cross over port on network hubs, and basically acts as an extensions of our computer network. So as you can guess we could have peer to peer net working with anyone that has a cable modem. But Com21 built in a way to switch that feature off, so we won't have as many possible security problems. We also offer dial-up access to our system along with the cable modem service. I currently have 512Kbs of bandwidth to play with. We are planing on a roll out to the the general public sometime in November. The public versions will start out with 256Kbs to start with, an allow 7.5 gig's worth of downloading per month. Should cost about $50 to $60 per month.

Chris Brandt WL7NG
In Anchorage, Alaska!!

John Koster wrote:

> It sounds like you are wanting to do in effect is have multiple PCs on the
> one cable modem. The problem being you only get one IP address assigned
> by the cable system (probably on a dynamic basis). I haven't done it yet,
> but I was planning on using an old 386 with Linux to allow the other 4 PCs
> in the house access. I haven't signed up for the cable modem service yet
> because they don't have dial up as an alternative, so I would still have
> to keep the dialup ISP for when I travel (which is a lot). They have a
> nice economic analysis which shows it isn't all that much more expensive
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> John Koster, W9DDD
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> > miles as the crow flies away from me. I have a cable modem and want to
> > share some of my bandwidth with him through one of my available port on
> > my five port hub.
> >   Chris Brandt WL7NG
> >
> >

145. RE: Ethernet Bridge?

From: "Derek J. Lassen" <kn6td@clubnet.net>
Date: Thu, 24 Sep 1998 23:13:13 -0700
To: ss@tapr.org
Message-ID: <2.2.32.19980925061313.009769c0@mail.clubnet.net>
Rendered body type: text/plain

If you are going to use NT on your server / router, you might want to look at the site http://willow.canberra.edu.au/~chrisc/nat32.html. There you will find a service called NAT32 which does address translation so that one NIC has 2 IP addresses. This allows the cable modem and the NIC to talk via ethernet and the NIC and the local LAN to talk.

The problem you are solving is that the cable modem and the NIC talking to it are using host numbers from the cable company's domain, while the router and other machines on the LAN are on another domain (presumably 192.198.1.xxx).

NT does not yet natively understand the concept of coexisting in more than one domain. I think this is a serious shortcoming which will soon be rectified.

As for the physical link - is the path to your friend's location line-of-sight and is also a Ham?

(s) Derek

146. [Fwd: [SS:101] RE: Ethernet Bridge?]

From: Chris Brandt <cbbrandt@gci.net>
Date: Thu, 24 Sep 1998 23:14:35 -0800
To: "ss@tapr.org" <ss@tapr.org>
Message-ID: <360B42DB.D7845464@gci.net>
Rendered body type: text/plain

No I'm not using NT, just a simple peer to peer network. No server is involved on my home network. I wanted to have both computers setup to play games, surf or do other things, all with the ability to share or what ever the need at the time. With my peer to peer my wife can surf while I play a game with friends, or do some work while still being able to get files off the other computer if she's using it. But the Nat32 program might be helpful if I know that the wireless Ethernet cards would work with my existing NIC card install together. Then I could maybe I could share with my buddy who is also a ham. And yes it would be line-of-sight. No building or mountains in the way.

Chris Brandt WL7NG

Derek J. Lassen wrote:

> If you are going to use NT on your server / router, you might want to look
> at the site http://willow.canberra.edu.au/~chrisc/nat32.html. There you will
> find a service called NAT32 which does address translation so that one NIC
> has 2 IP addresses. This allows the cable modem and the NIC to talk via
> ethernet and the NIC and the local LAN to talk.
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> it are using host numbers from the cable company's domain, while the router
> and other machines on the LAN are on another domain (presumably 192.198.1.xxx).
>
> NT does not yet natively understand the concept of coexisting in more than
> one domain. I think this is a serious shortcoming which will soon be rectified.
>
> As for the physical link - is the path to your friend's location
> line-of-sight and is also a Ham?
>
> (s) Derek

147. Re: [SS:102] [Fwd: RE: Ethernet Bridge?]

From: Steve Wilson <stevew@eng.adaptec.com>
Date: Fri, 25 Sep 1998 09:04:18 -0700
To: ss@tapr.org
Message-ID: <360BBF02.36D16156@eng.adaptec.com>
Rendered body type: text/plain

Chris Brandt wrote:
>
> No I'm not using NT, just a simple peer to peer network. No server is involved on
> my home network. I wanted to have both computers setup to play games, surf or do
> other things, all with the ability to share or what ever the need at the time. With
> my peer to peer my wife can surf while I play a game with friends, or do some work
> while still being able to get files off the other computer if she's using it. But
> the Nat32 program might be helpful if I know that the wireless Ethernet cards would
> work with my existing NIC card install together. Then I could maybe I could share
> with my buddy who is also a ham. And yes it would be line-of-sight. No building or
> mountains in the way.
>
Chris Brandt WL7NG

Chris,

The one thing that has been constant in all the replies is the basic
recipe that
you need to have two separate domains running....one that connects you
to the
Internet thru the cable modem, and the other which connects all your
home
systems AND the router connecting the two domains.

There is a significant limitation on most of the cable modem systems,
that
being you are only assigned ONE IP address. Usually the IP is assigned
with
DHCP, thus it is a dynamic number. The policies differ between systems
- some
IP addresses last 5 days, some last an hour requiring a new login. In
any
case your router needs to be able to deal with Dynamic IP assignment
potentially.

Consequently, the peer-to-peer system doesn't work unless the only two peers are
a single PC and the cable modem.

As soon as you have 2 systems that want to employee the same IP address you
require a Network Address Translation Agent of some sort - be it Linux or
Win95/98 or NT. All have utilities to do this - just pick the one that
skins the cat for you. As has been noted - a 386DX with two NE2K Nics and
30-50Mb of hard disk running linux will do the job admirably. I did that
myself initially. Total cost of the system was about $40 for the two Nics.
I saw peak thruput of around 400Kbytes/sec on that system.

Hope this helps.
--
Steve Wilson

148. Re: [SS:101] RE: Ethernet Bridge?

From: JOHN MALMBERG <LNUSSAT.JMALMBER@eds.com>
Date: Fri, 25 Sep 1998 23:50:07 -0400
To: SS <ss@TAPR.ORG>
Message-ID: <009500001866277800000 2L082*@MHS>
Rendered body type: text/plain

>NT does not yet natively understand the concept of coexisting in more than
>one domain. I think this is a serious shortcoming which will soon be
rectified.

Are you talking Internet Domains, or what m$soft pretends are security
domains? There is no relationship between them.

Fully qualified Internet domain names are resolved by a DNS. One of these is
native on NT-SERVER, but not the workstation.
With out a DNS or a WINS server, names are resolved by broadcast. The
broadcast is most likely blocked by your ISP.

If you do not have a local DNS set up on something, NT SERVER, VMS, LINUX, or
UNIX, then you are using the ISP's DNS and of course it knows nothing of your
local network.

If you have FILE and PRINT sharing on a WINDOWS PC, or are running WINDOWS-NT,
it is not a good idea to connect up to a cable modem unless you have firewall
that blocks the LANMAN traffic. This is also a problem with dialup
connections, but they do not last as long and are much slower, so the risk is
smaller.

-John, WB8TYW

149. Re: [SS:104] RE: Ethernet Bridge?

From: "Derek J. Lassen" <kn6td@clubnet.net>
Date: Fri, 25 Sep 1998 23:17:43 -0700
To: ss@tapr.org
Message-ID: <2.2.32.19980926061743.00f73368@mail.clubnet.net>
Rendered body type: text/plain

At 10:51 PM 9/25/98 -0500, you wrote:
>>NT does not yet natively understand the concept of coexisting in more than
>>one domain. I think this is a serious shortcoming which will soon be
>rectified.
>
>Are you talking Internet Domains, or what m$soft pretends are security
>domains? There is no relationship between them.

I was refering to Internet Domains, ie IP Addresses.

MS is phasing out the "security domain" concept. It name is an unfortunate
holdover from before the time when "MS invented the internet" (just
kidding!!!!). Last I heard, they are going to a derrivitive of Kerberos.

>
>Fully qualified Internet domain names are resolved by a DNS. One of these is
>native on NT-SERVER, but not the workstation.
>With out a DNS or a WINS server, names are resolved by broadcast. The
>broadcast is most likely blocked by your ISP.

>
>If you do not have a local DNS set up on something, NT SERVER, VMS, LINUX, or
>UNIX, then you are using the ISP's DNS and of course it knows nothing of your
>local network.

Again, the problem is that the cable modem gets an IP address from the cable
head end (may be done via DNS / DHCP / (R)ARP, depending upon the
implimentation of the modem). The modem will not pass on the DNS / DHCP/
(R)ARP broadcasts. And if you just go ahead and give your machine some IP
host numbers from the cable company's domain (without asking them (they are
WAY UNLIKELY to give permission), and the numbers that you subsume already
exist on the other side of the modem, you are going to confuse the hell out
of their router (unless it is a Crisco - its already confused).

>
>If you have FILE and PRINT sharing on a WINDOWS PC, or are running WINDOWS-NT,
>it is not a good idea to connect up to a cable modem unless you have firewall
>that blocks the LANMAN traffic. This is also a problem with dialup
>connections, but they do not last as long and are much slower, so the risk is
>smaller.
No problem - kill the "everyone" user group and create a group which is
local and trusted; make sure its passworded, priveledge restricted, and host
restricted. And, you need to SEVERLY restrict where Administrator (which
should be renamed, BTW) can log on from.

>
>
>-John, WB8TYW
>
>
(s) Derek, KN6TD

150. Re: [SS:105] RE: Ethernet Bridge?

From: JOHN MALMBERG <LNUSSAT.JMALMBER@eds.com>
Date: Sat, 26 Sep 1998 03:58:39 -0400
To: SS <ss@TAPR.ORG>
Message-ID: <009500001866421400000 2L042*@MHS>
Rendered body type: text/plain

Derek, KN6TD wrote:

>I was refering to Internet Domains, ie IP Addresses.

It is my understanding that the cable modem gets an IP address(s) from the head
end that it is allowed to transmit to the rest of the network, and will filter
out anything else. Additional addresses are available at extra charge.

>The modem will not pass on the DNS / DHCP/ (R)ARP broadcasts.

DNS is not a broadcast, it is a direct request. If DHCP is active, (here it is
not) then the DNS will get set on your box as soon as the DHCP request is
serviced, unless you overrode it previously.

Once you know their DNS, you can point your local DNS at it. Your name querys
go to yours, and if it does not know them, it will then ask the ISP's. No
broadcasts are involved with DNSs.

It is unlikely that they will allow your DNS to update the ISP's, and you
should have no need.

If you have your own DNS, you can have as many private Internet Domains as you
like.

>>
>>If you have FILE and PRINT sharing on a WINDOWS PC, or are running WINDOWS-NT,
>>it is not a good idea to connect up to a cable modem unless you have firewall
>>that blocks the LANMAN traffic. This is also a problem with dialup
>>connections, but they do not last as long and are much slower, so the risk is
>>smaller.
>No problem - kill the "everyone" user group and create a group which is
>local and trusted; make sure its passworded, priveledge restricted, and host
>restricted. And, you need to SEVERLY restrict where Administrator (which
>should be renamed, BTW) can log on from.

Sorry, that does not work. That only stops the point and click hackers that
can not read. The information is posted else-where on the wierd wild web. A
firewall is the only known defense.

Sanity check all security information posted. Much of it sounds good in

principle, but doesn't work in practice.

-John, WB8TYW

151. FCC ANNOUNCES SHIFT IN AMATEUR RADIO ENFORCEMENT FUNCTIONS

From: Dewayne Hendricks <dewayne@warpspeed.com>
Date: Mon, 28 Sep 1998 19:50:30 -0700
To: fccreg@tapr.org (TAPR FCC Regulatory List),
netsig@tapr.org (TAPR Networking List),
ss@tapr.org (TAPR SS Mailing List)
Message-ID: <v04101a03b235fb2f3fd6@[192.168.1.7]>
Rendered body type: text/plain

COMPLIANCE AND INFORMATION ACTION
September 25, 1998
Report No. CI 98-17

FCC ANNOUNCES SHIFT IN AMATEUR RADIO ENFORCEMENT FUNCTIONS

The Federal Communications Commission announced today a change in the handling of enforcement actions concerning the Amateur Radio Service. By internal arrangement between the FCC's Compliance and Information Bureau (CIB) and the FCC's Wireless Telecommunications Bureau (WTB), as of September 1, 1998, all investigation, evaluation and processing of radio amateur related enforcement matters have been transferred to the CIB.
The main objective of this change is to facilitate the Commission's pursuit of compliance in the amateur services especially with regard to resolution of interference complaints.

The CIB staff now handles amateur radio enforcement matters from initiation to resolution, including, as appropriate, complaints, amateur testing issues, warnings, monetary penalties, revocation hearings or, in extreme cases, equipment seizure and prosecution through the Department of Justice. WTB continues to handle all processing and licensing matters including new applications and licensing renewal matters. WTB continues to handle all policy and rule making matters related to amateur radio.

All amateur enforcement questions and complaints should be sent to:

Compliance and Information Bureau
Compliance Division
Attention: Amateur Complaints
1919 M Street, Mail Stop 1500E1, Washington, D.C. 20554

Calls should be directed to (202) 418-1184.

News Media contacts: Meribeth McCarrick or David Fiske at (202) 418-0500
Compliance and Information Bureau contact: Riley Hollingsworth at (717) 338-2502

- FCC -

152. Re: [SS:57] Re: FHSS radio project

From: JOHN MALMBERG <LNUSSAT.JMALMBER@eds.com>
Date: Tue, 29 Sep 1998 20:32:03 -0400
To: SS <ss@TAPR.ORG>
Message-ID: <009500001878085100000 2L012*@MHS>
Rendered body type: text/plain

Greg, WD5IVD wrote:

>>Local hams are cheap, so I need material to let them know how much setting
>>up a network would cost, also what impact the local terrain of rolling
>>hills will cause.

>Cheap is no longer a defense or an excuse these days. Cheap means that our
>hobby is going down. I see hams at every hamfest dropping tons of money on
>stuff and computers. People don't seem to think twice about spending money
>on computers, Internet access, or whatever over a year.

The returns on use are much higher for these than that with an SS unit. The higher the cost of the unit, the longer it will take to build a critical mass. Traditional radios, even uhf ones already have a number of other people that some one can communicate with.

The Internet only requires from $20 to $40/month. With cable modems hitting the area at the cost of an ISP and a second phone line, the access will be faster than the SS units, and again a wider group to communicate with. The initial down payment is not there.

When the best phone modems could allow 33K, or if you could get ISDN to work at 128K, the SS unit offered something to attract the computer users into the hobby.

It still can, but it will be a harder sell.

Our Hobby is going down. We need new blood, and this looks like one of the best ways to get it.
Unfortunately, much of the new blood is in high school and is limited in budget. Computer clubs are possibly ripe for recruitment. Looks like I should be looking there in addition to ham club.

>Our goal has always been to shot for something around $500 a unit, but I
>wouldn't be surprised that the beta units will cost more

I thought that I saw on the tapr.org www page that $350 a unit was viewed as a target, that if it were exceeded, it was anticipated that the project would fail.

>Figure $1000-$2000 a network node site to get started.

That number can be scarry for recruitment. A better sales job will be needed.

Where can expenses be reduced?
Tower mounted xcvrs to reduce coax costs?
I never have had much problems building antennas. I do not have test equipment that works at that frequency, but that could be shared by a large group.
Does that include the user's computer?

>Putting up a central site that covers everyone to share the resource (like
>has been done forever) is not one of the best solutions. Old paradigms of
>networking is not going to work in many cases.

I aggree. The single session per radio is going to be a big obstacle. I suspect that to get the distance between sites here, directional anttennas will need to be used. If dedicated radios to each link are also used, that means that each ham will need to purchase two radios.

The same is true for the HUB and SPOKE configuration. While the HUB and SPOKE is more spectral efficient, it may not provide the coverage needed for this area.

The two most likely beginning applications that I see here are WWW servers and multiple point chat sessions. Both need the multiple connection capability that is not planned for the initial units.

>You can start doing something today with existing SS STAs. No one should
>be waiting for us (TAPR) to hand them a radio.

I would not expect as a lone wolf to be able to create a radio that would be compatable with the TAPR SS units. Or even to come close to it's quality or cost.

The concern is very high about investing a lot of time and money to end up with an incompatable system.

Once the radios are communicating with each other, at even a basic level, then some experimentation could begin that could be helpful to the cause. I think that GNU CC cross compilers are available for the CPU on the TAPR board.

At this point I do not even know if I could reach the closest ham to me about 8 miles away, and neither of us have towers.

If there were someway cheap that could help determine that, it would help us determine the true cost of deployment.

Unfortunately my expertise is now more on the computer side, such as protocols and routing than on the radio side now. I am concentrating on making sure I know how to build an effective network with PCs, including security and privacy concerns. Also on how to gateway to the existing 1200 baud network.

-John, WB8TYW

October 1998

Original source file: ss.9810
Source: http://ftp.tapr.org/tapr_history/SIG_Archives/spread-spectrum-sig/mail_archive/ss.9810

1. SUBSCRIBE SS RICARDO A. GHIGLIAZZA

```
From: "Ricardo A. Ghigliazza" <rghigliazza@airnetworks.com.ar>
Date: Sun, 12 Jul 1998 03:24:05 -0000
To: "'ss@tapr.org'" <ss@tapr.org>
Message-ID: <01BDAD44.92CB2490.rghigliazza@airnetworks.com.ar>
Rendered body type: text/plain
```

[Empty message body]

2. Re: SS on HF

```
From: "Steve Sampson" <ssampson@usa-site.net>
Date: Mon, 12 Oct 1998 09:19:12 -0500
To: <ss@tapr.org>
Message-ID: <001a01bdf5eb$49018d00$87228cd1@dodge.usa-site.net>
Rendered body type: text/plain
```

I was spinning the dial this weekend, and the thought occurred to me,
that SS doesn't really need the traditional "band segment" allocation.

The SS band is 0 to 30 MHz on HF, but to be useful, it would need to
have enough hits in each propagating segment, to perform the high
bandwidth application.

The question I have, is there a method in place to ask for 100 or so
discrete frequencies? I know this group wasn't formed to discuss
regulatory issues, but given that kind of worldwide allocation (a WARC
non-band, but discrete set of frequencies) it would give radio
designers something to plan to. Since these things take years, and
we haven't started yet, I would think some planning is needed, other
than, we will plop down on the traditional segments, and the others
will probably move plan.

Steve

3. RE: 110] Re: SS on HF

```
From: "Lanier, Robert" <rlanier@harris.com>
Date: Mon, 12 Oct 1998 11:24:59 -0400
To: "'ss@tapr.org'" <ss@tapr.org>
Message-ID: <275399FB18C4D111871300805FBEB72F01215BCD@corpmx6.ess.harris.com>
Rendered body type: text/plain
```

I know this is opening up a can of worms, but I really want to say something
about this. I think we should use microwave frequencies for SS experiementing.
We have frequency bands that no one is using and will probably be taken away if
don't find a use for them. It shouldn't be that difficult to design equipment
for GHz, but if someone wishes to knock me down on that one, I would love to
hear it. I think there is too much aggrevation involved in getting SS on the HF
bands. Besides, GHz frequencies are available and relatively unused. I realize
there are many pros and cons with this issue (available antennae, existing
equipment, etc.), but with the bandwidth needed and unused spectrum going
unused, it seems only logical to go this route.

What do you guys think?

Tony   KE4ATO

> -----Original Message-----
> From: ss@tapr.org [SMTP:ss@tapr.org]
> Sent: Monday, October 12, 1998 9:27 AM
> To: ss@tapr.org
> Subject: [SS:110] Re: SS on HF
>
> I was spinning the dial this weekend, and the thought occurred to me,
> that SS doesn't really need the traditional "band segment" allocation.
>
> The SS band is 0 to 30 MHz on HF, but to be useful, it would need to
> have enough hits in each propagating segment, to perform the high
> bandwidth application.
>
> The question I have, is there a method in place to ask for 100 or so
> discrete frequencies? I know this group wasn't formed to discuss
> regulatory issues, but given that kind of worldwide allocation (a WARC
> non-band, but discrete set of frequencies) it would give radio

designers something to plan to. Since these things take years, and
we haven't started yet, I would think some planning is needed, other
than, we will plop down on the traditional segments, and the others
will probably move plan.

Steve

4. Re: [SS:111] RE: 110] Re: SS on HF

From: "Steve Sampson" <ssampson@usa-site.net>
Date: Mon, 12 Oct 1998 14:11:02 -0500
To: <ss@tapr.org>
Message-ID: <000a01bdf614$0dca9140$87228cd1@dodge.usa-site.net>
Rendered body type: text/plain

Thanks for the response Tony. I guess before anyone get's too excited
about 1 GHz and up, is to look at the problems TAPR went through to
locate a source for some of its parts. Not to say that, it probably is pretty
hard to find parts for *any* project below 10k quantities...

But I figure if we start planning now, we could have all the nations in line
to WARC open a new band in 10 years. That way no one feels threatened.

That's all I was getting at. Someway to end the ARRL membership
stance against SS except on 70cm.

Microwave:

I finally got my Proxim Symphony ISA cards last week. These work
out of the 2.4 GHz band. Sad to say that they are Win95 only, with
Win98 to be announced, and anything else *not* to be announced :-)

I thought maybe they might work with the RangeLan2 card on my NT
box, but for some reason the darn thing pooped out (lack of use no
doubt). But anyway, the product represents a breakthrough in price.

Steve

-----Original Message-----
From: Lanier, Robert <rlanier@harris.com>
To: ss@tapr.org <ss@tapr.org>
Date: Monday, October 12, 1998 11:31 AM
Subject: [SS:111] RE: 110] Re: SS on HF

>I know this is opening up a can of worms, but I really want to say something
>about this. I think we should use microwave frequencies for SS experiementing.

5. Re: [SS:111] RE: 110] Re: SS on HF

From: Dick Bingham <dickrb@lsid.hp.com>
Date: Mon, 12 Oct 1998 13:23:34 -0700
To: ss@tapr.org
Message-ID: <36226546.15A1281F@lsid.hp.com>
Rendered body type: text/plain

Hi Tony and everyone else!

This is a grand idea IF you have neighbors close-by who can receive your sigs.
I am moving in a few months to a QTH that has no RF-neighbors! In fact, the
only way I can experiment with SS is via HF links. At present I have no VHF
(read that 2-meters and above) links to the outside world and I don't think the
NPS will allow me to use their repeater-site to get out to the hams 50-miles
away on 2-meters let alone install SS equipment!

I have operated A DSSS system from this site over a 100-mile path on 3575KHz
using about 1/4 watt of equivalent CW power to minimize QRM to the weak-
signal users on 80-meters. My conclusions are that DSSS will not work for me
at those low levels and FHSS is the only possible solution for me.

I plan to run a simple "hopper" this winter driven by the DSSS PRN generator
and evaluate the results. I will be using a (2^7 - 1) = 127-step L.O. at about
5.xxMHz so tests can also be run on 20-meters (9 +/- 5.xxMHz = 20/80 Mtrs).
Everything is coherent in that all freqs are derived from stable 10MHz clocks
at both ends of the link.

73 de w7wkr - Dick
==========

Lanier, Robert wrote:

> I know this is opening up a can of worms, but I really want to say something
> about this. I think we should use microwave frequencies for SS experiementing.
> We have frequency bands that no one is using and will probably be taken away if
> don't find a use for them. It shouldn't be that difficult to design equipment
> for GHz, but if someone wishes to knock me down on that one, I would love to
> hear it. I think there is too much aggrevation involved in getting SS on the HF
> bands. Besides, GHz frequencies are available and relatively unused. I realize
> there are many pros and cons with this issue (available antennae, existing
> equipment, etc.), but with the bandwidth needed and unused spectrum going
> unused, it seems only logical to go this route.
>
> What do you guys think?
>
> Tony   KE4ATO
>
>   -----Original Message-----
>   From: ss@tapr.org [SMTP:ss@tapr.org]
>   Sent: Monday, October 12, 1998 9:27 AM
>   To: ss@tapr.org
>   Subject: [SS:110] Re: SS on HF
>
>   I was spinning the dial this weekend, and the thought occurred to me,
>   that SS doesn't really need the traditional "band segment" allocation.
>
>   The SS band is 0 to 30 MHz on HF, but to be useful, it would need to
>   have enough hits in each propagating segment, to perform the high
>   bandwidth application.
>
>   The question I have, is there a method in place to ask for 100 or so
>   discrete frequencies? I know this group wasn't formed to discuss
>   regulatory issues, but given that kind of worldwide allocation (a WARC
>   non-band, but discrete set of frequencies) it would give radio
>   designers something to plan to. Since these things take years, and
>   we haven't started yet, I would think some planning is needed, other
>   than, we will plop down on the traditional segments, and the others
>   will probably move plan.
>
>   Steve

6. RE: 112] RE: 110] Re: SS on HF

From: "Lanier, Robert" <rlanier@harris.com>
Date: Mon, 12 Oct 1998 16:33:50 -0400
To: "'ss@tapr.org'" <ss@tapr.org>
Message-ID: <275399FB18C4D111871300805FBEB72F01215BD2@corpmx6.ess.harris.com>
Rendered body type: text/plain

I don't think the availability of parts should be that difficult. I was thinking
more along the lines of a transverter. I think California Microwave sells some
the are in the $200 range. I could be wrong about that though.

My idea was basicly to develop a "baseband" SS processor and
upconvert/downconvert the signal to GHz bands. I realize this is (much) easier
said than done, but with proper planning, it should be do-able.

Tony

        -----Original Message-----
        From: ss@tapr.org [SMTP:ss@tapr.org]
        Sent: Monday, October 12, 1998 2:22 PM
        To: ss@tapr.org
        Subject: [SS:112] RE: 110] Re: SS on HF

        Thanks for the response Tony. I guess before anyone get's too excited
        about 1 GHz and up, is to look at the problems TAPR went through to
        locate a source for some of its parts. Not to say that, it probably is
pretty
        hard to find parts for *any* project below 10k quantities...

        But I figure if we start planning now, we could have all the nations in
line
        to WARC open a new band in 10 years. That way no one feels threatened.

        That's all I was getting at. Someway to end the ARRL membership
        stance against SS except on 70cm.

        Microwave:

        I finally got my Proxim Symphony ISA cards last week. These work
        out of the 2.4 GHz band. Sad to say that they are Win95 only, with

Win98 to be announced, and anything else *not* to be announced :-)

I thought maybe they might work with the RangeLan2 card on my NT box, but for some reason the darn thing pooped out (lack of use no doubt). But anyway, the product represents a breakthrough in price.

Steve

-----Original Message-----
From: Lanier, Robert <rlanier@harris.com>
To: ss@tapr.org <ss@tapr.org>
Date: Monday, October 12, 1998 11:31 AM
Subject: [SS:111] RE: 110] Re: SS on HF

>I know this is opening up a can of worms, but I really want to say something
>about this. I think we should use microwave frequencies for SS experiementing.

7. Re: [SS:112] RE: 110] Re: SS on HF

From: John Hansen <hansen@fredonia.edu>
Date: Mon, 12 Oct 1998 16:57:33 -0400
To: ss@tapr.org
Message-ID: <3.0.3.32.19981012165733.006b3454@oak.ait.fredonia.edu>
Rendered body type: text/plain

At 02:22 PM 10/12/98 -0500, you wrote:
>
>I finally got my Proxim Symphony ISA cards last week. These work
>out of the 2.4 GHz band. Sad to say that they are Win95 only, with
>Win98 to be announced, and anything else *not* to be announced :-)
>
The last time I looked at their Web page they had pricing for their ISA station adapter but did not have pricing for their access point yet. I'm wondering what you had to pay in order to put together an entire system of these components.

Thanks in advance,
John Hansen, W2FS

8. UNSUBSCRIBE

From: "D. Leath" <dleath@cyberport.com>
Date: Mon, 12 Oct 1998 15:10:03 -0600
To: <ss@tapr.org>
Message-ID: <002501bdf624$afa93740$467686cc@dleath>
Rendered body type: text/plain

[Empty message body]

9. UNSUBSCRIBE

From: murali@umr.edu
Date: Mon, 12 Oct 1998 16:25:15 -0500 (CDT)
To: ss@tapr.org
Message-ID: <199810122125.QAA19908@rocket.cc.umr.edu>
Rendered body type: text/plain

[Empty message body]

10. Re: [SS:115] RE: 110] Re: SS on HF

From: Steve Sampson <ssampson@usa-site.net>
Date: Mon, 12 Oct 1998 17:31:49 -0500 (CDT)
To: ss@tapr.org
Message-ID: <199810122231.RAA14385@access.usa-site.net>
Rendered body type: text/plain

I payed $149 each for two ISA cards. To tell the truth I really wanted NT drivers, but thought I could get by with Win95. That is, just run the serial port over to the router. Lacking that, just keep the two networks seperate. That's what I have right now. My home system is a Ascend router to ISDN and a 10BT hub (actually it is a Co-Op ISP I've been elected to manage). I really want an AUI to Proxim, so I can get rid of the ethernet at the router (put it out in the garage) :-)

I look at the Proxim access point as kind of neat, but really don't see the need. I already own a modem and the Proxim ISA cards come with software to make one the modem master, and the other computers share it. It also dials on demand when any computer requires Internet.

Sorry if this is becoming an Ad, just wanted to fill in a few blanks.

Best Regards,

Steve

> >I finally got my Proxim Symphony ISA cards last week. These work
> >out of the 2.4 GHz band. Sad to say that they are Win95 only, with
> >Win98 to be announced, and anything else *not* to be announced :-)
> >
> The last time I looked at their Web page they had pricing for their ISA
> station adapter but did not have pricing for their access point yet. I'm
> wondering what you had to pay in order to put together an entire system of
> these components.

11. Symphony (was Re: SS on HF)

From: Jeff King <jeff@aerodata.net>
Date: Mon, 12 Oct 1998 19:05:44 -0400
To: ss@tapr.org
Message-ID: <3.0.5.32.19981012190544.03725100@aerodata.net>
Rendered body type: text/plain

At 02:22 PM 10/12/98 -0500, Steve Sampson wrote:
>
>Microwave:
>
>I finally got my Proxim Symphony ISA cards last week. These work
>out of the 2.4 GHz band. Sad to say that they are Win95 only, with
>Win98 to be announced, and anything else *not* to be announced :-)
>
>I thought maybe they might work with the RangeLan2 card on my NT
>box, but for some reason the darn thing pooped out (lack of use no
>doubt). But anyway, the product represents a breakthrough in price.
>
>Steve

I was on the Linux "Proxim Rangelan" driver page the other night.
(Forgot the URL, but just do a search with linux & proxim)
The fellow was suggesting he thought the Symphony might work with
that driver but hadn't tried it. Anyone try this yet? I seem to
recall Proxim says it is compatible on the RF side with the RangeLan2's.

Also, anyone see Diamond Multimedia's SS network card? Its about the
same as the new Proxim as far as feature set goes.

-Jeff

| Jeff King   Aero Data Systems |
| jeff@mich.com P.O. Box 510895 |
| (248)471-1787 Livonia, MI 48151 |
|F(248)471-0279 United States |
----

12. Re: [SS:119] SS digest 538

From: "Pawel Kaczmarek" <drake@fiber.net.pl>
Date: Wed, 14 Oct 1998 01:09:59 +0100
To: ss@tapr.org
Message-ID: <3623EBD7.3804CEA7@fiber.net.pl>
Rendered body type: text/plain

Remove my e-mail from the suscriber list please !

13. Re: [SS:119] Symphony (was Re: SS on HF)

From: Brett Glass <brett@lariat.org>
Date: Tue, 13 Oct 1998 20:44:40 -0600
To: ss@tapr.org, ss@tapr.org
Message-ID: <4.1.19981013204334.00c02810@mail.lariat.org>
Rendered body type: text/plain

At 06:06 PM 10/12/98 -0500, Jeff King wrote:

>Also, anyone see Diamond Multimedia's SS network card? Its about the
>same as the new Proxim as far as feature set goes.

It may be yet another repackaging of the Harris Semiconductor DSSS
PCMCIA card. The Harris card is 802.11-compliant and uses dual

antennas.

--Brett

14. Re: [SS:90] Ethernet Bridge?

From: "Scott Morris" <smorris@mindspring.com>
Date: Thu, 15 Oct 1998 22:38:29 -0400
To: <ss@tapr.org>
Message-ID: <04a801bdf8ae$0f758580$7c5d56d1@win95sem>
Rendered body type: text/plain

Were you able to get any help on this? I have been away for a while. I do
a lot with remote computing. Let me know if you still need help.

Scott
smorris@mindspring.com

-----Original Message-----
From: Chris Brandt <cbbrandt@gci.net>
To: ss@tapr.org <ss@tapr.org>
Date: Thursday, September 24, 1998 1:06 PM
Subject: [SS:90] Ethernet Bridge?

>Does anyone have suggestion on a cheap ethernet bridge. Or a way that I
>could give another buddy access to my home network? He lives about 3
>miles as the crow flies away from me. I have a cable modem and want to
>share some of my bandwidth with him through one of my available port on
>my five port hub.
>   Chris Brandt WL7NG
>

November 1998

Original source file: ss.9811
Source: http://ftp.tapr.org/tapr_history/SIG_Archives/spread-spectrum-sig/mail_archive/ss.9811

1. Questions about SS experimentation.

From: Devin Butterfield <dbutter@ix.netcom.com>
Date: Sat, 07 Nov 1998 00:25:08 -0500
To: ss@tapr.org
Message-ID: <3643D9B4.F7105D87@ix.netcom.com>
Rendered body type: text/plain

Greetings,

I am an Electrical Engineering student at
California State Polytechnic University and have
also been a Ham for just under 10 years. For more
than half that time I have been fascinated with
Spread Spectrum communication systems and have
been studying the theory for several years now. I
am interested in working on a radio design and
experimenting with Spread Spectrum, and am
wondering if anybody who has already had some
experience with the hands on design of a spread
spectrum radio could give me some advice or
pointers to get me started. I□ll try to keep this
short and specific:

1. Can anyone recommend a good book or reference
on spread spectrum radio design (Not SS theory□I
already have loads of that. :))?

2. For starters, I am interested in working with
some of the part 15 chips that are available, but
I am wondering if anyone might suggest one that is
highly integrated and easy to work with (can be
FHSS or DSSS)?

3. I am aware that most of the part 15 SS chips as
well as many other digital devices are tiny
surface mount packages (which I don□t have much
experience with!). Does anyone have any advice for
cost effective prototyping with these devices? Are
there special sockets available or am I better off
making up a PCB for every prototype? Also, does
anyone know of any company or other source to make
up surface mount PCBs for a reasonable price?

4. Any and all other advice or tips that anyone
might be kind enough to share. :)

Sorry for so many questions but there are very few
sources of info on this subject, and TAPR is
obviously on the cutting edge.
Please, any help or advice you can share is much
appreciated!
Thanks in advance!
--
Devin Butterfield
KD6DRS

2. Re: [SS:123] Questions about SS experimentation.

From: Matthias Weingart <matthias@penthouse.boerde.de>
Date: Sat, 7 Nov 1998 14:40:41 +0100 (MET)
To: ss@tapr.org
Message-ID: <Pine.LNX.3.95.981107142703.8004A-100000@penthouse.boerde.de>
Rendered body type: text/plain

Hi Devin,

I have been fascinated with SS too. We are experimenting with commercial
products in the ISM-band (WL2420 of ZCOM -> 25km distance with just 50mW
and 24dBi antennas :-), but I would like to make my own SS-tranceiver ...

2. Would you please post your list of the 15 SS chips? I think you can get
a complete prototype set from Harris for their chips (the 2,4GHz one's).

3. I would not not recommended to use sockets with high frequencies - a

PCB would be better - but I made some "free air wired" proto's with SMD's
:-) www.pcb-pool.com makes cheap but professional prototype PCB's (100,-DM
($60?) for a 160x100mm board) - but is a european service I think.

73,
DG6MMT , Matthias

On Sat, 7 Nov 1998, Devin Butterfield wrote:

> Greetings,
>
> I am an Electrical Engineering student at
> California State Polytechnic University and have
> also been a Ham for just under 10 years. For more
> than half that time I have been fascinated with
> Spread Spectrum communication systems and have
> been studying the theory for several years now. I
> am interested in working on a radio design and
> experimenting with Spread Spectrum, and am
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> experience with the hands on design of a spread
> spectrum radio could give me some advice or
> pointers to get me started. I□ll try to keep this
> short and specific:
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> on spread spectrum radio design (Not SS theory□I
> already have loads of that. :))?
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> 2. For starters, I am interested in working with
> some of the part 15 chips that are available, but
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> highly integrated and easy to work with (can be
> FHSS or DSSS)?
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> surface mount packages (which I don□t have much
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> cost effective prototyping with these devices? Are
> there special sockets available or am I better off
> making up a PCB for every prototype? Also, does
> anyone know of any company or other source to make
> up surface mount PCBs for a reasonable price?
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> Sorry for so many questions but there are very few
> sources of info on this subject, and TAPR is
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> Please, any help or advice you can share is much
> appreciated!
> Thanks in advance!
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> Devin Butterfield
> KD6DRS
>
>
>

3. Re: [SS:124] Re: Questions about SS experimentation.

From: Devin Butterfield <dbutter@ix.netcom.com>
Date: Sat, 07 Nov 1998 14:02:41 -0500
To: ss@tapr.org
Message-ID: <36449950.A9FC5DA@ix.netcom.com>
Rendered body type: text/plain

Hi Matthias,

Thanks for your response!

Actually, I didn't mean that I have a list of 15 devices--I meant that I was
interested in first experimenting with "Part-15" devices. He he he! :)

Anyway the only devices I am familiar with are the Harris chips and the AMI
Waveplex chips (although I heard that these are no longer available?).

Thank you for your help!

Regards,
    Devin Butterfield
    KD6DRS

Matthias Weingart wrote:

> Hi Devin,
>
> I have been fascinated with SS too. We are experimenting with commercial
> products in the ISM-band (WL2420 of ZCOM -> 25km distance with just 50mW
> and 24dBi antennas :-), but I would like to make my own SS-tranceiver ...
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> a complete prototype set from Harris for their chips (the 2,4GHz one's).
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> PCB would be better - but I made some "free air wired" proto's with SMD's
> :-) www.pcb-pool.com makes cheap but professional prototype PCB's (100,-DM
> ($60?) for a 160x100mm board) - but is a european service I think.
>
> 73,
> DG6MMT , Matthias
>

4. Re: [SS:123] Questions about SS experimentation.

From: "Derek J. Lassen" <kn6td@clubnet.net>
Date: Sat, 07 Nov 1998 22:14:59 -0800
To: ss@tapr.org
Message-ID: <Version.32.19981107214832.00dc1cd0@mail.clubnet.net>
Rendered body type: text/plain

I would take a look at the z2000 from Zilog / Stanford Telecom. It does full duplex binary to DSSS at up to 11 megachips /second. You need a D/A on the output and an A/D on the input (2 A/Ds at faster rates). And Maxim has a chipset refered to as "RF to Bits" - the up and down converters, I and Q A/D, and Local Osc. Just add the D/A. Motorola make a PLL that has a charge pump and driver amplifier to give an 0 to 30 volt swing for the L.O. varactor. Mini circuits has ams, mixers, etc at prices that can't be beat.

You'll also need an audio codec and antialias filters. A mic pre amp and speaker power am (National) are in there too.

Brains - it'll need a processsor. Maybe the intel 386ex, the Zilog z182 or the Motorola 68360. The 68360 would allow you to have 2 audio channels and 2 async data channels and 1 sync data channel.

You should also take a look at the Prisim chipset if you haven't yet.

Hope this helps you get started...

73
Derek, KN6TD

5. PANSAT

From: Mike Cheponis <mac@Wireless.Com>
Date: Mon, 9 Nov 1998 22:53:13 -0800 (PST)
To: ss@tapr.org
Message-ID: <Pine.BSI.3.96.981109224805.946D-100000@culver.net>
Rendered body type: text/plain

I hadn't see this on this list yet, but PANSAT (the Petite Amateur Navy Satellite) was launched from Space Shuttle Discovery (STS-95) on 30 Oct 98.

It is the world's first ham Spread Spectrum satellite.

http://www.sp.nps.navy.mil/pansat/

-Mike K3MC

6. PANSAT Hdwr

From: eric <epaolin@mail5.clio.it>
Date: Wed, 11 Nov 1998 09:34:39 +0100
To: ss@tapr.org
Message-ID: <1301345617-19091840@mail.clio.it>
Rendered body type: text/plain

Ref: PANSAT

Does anyone know when designs/kits for working through PANSAT will be available?

Eric

7. Re: [SS:128] SS digest 544

From: "Steven R. Bible" <srbible@gate.net>
Date: Wed, 11 Nov 1998 15:18:02 -0500
To: ss@tapr.org
Message-ID: <3.0.5.32.19981111151802.009c7cc0@pop.gate.net>
Rendered body type: text/plain

>Date: Wed, 11 Nov 1998 09:34:39 +0100
>From: eric <epaolin@mail5.clio.it>
>To: ss@tapr.org
>Subject: PANSAT Hdwr
>Message-ID: <1301345617-19091840@mail.clio.it>
>
>Ref: PANSAT
>
>Does anyone know when designs/kits for working through PANSAT will be
available?

Right now PANSAT is in BPSK mode and will not be spreading until the
operating system has been uploaded.

The command station is one-of-a-kind right now, and the PANSAT team is on
the steep end of the learning curve. Once all the bugs are worked out, I
am sure they'll have a good design to share with us. It has always been
their intention to publish how to communicate with PANSAT. Just as with
all projects, shortage of time and man-power. Hang in there. There's
still a couple of months till PANSAT is fully commissioned.

Try listening in on the 436.500 MHz (plus and minus doppler) center frequency.

- Steve
(n7hpr@tapr.org)

8. Re: [SS:128] PANSAT Hdwr

From: Daven6ojj@aol.com
Date: Wed, 11 Nov 1998 23:06:52 EST
To: ss@tapr.org
Message-ID: <e18c8c0d.364a5edc@aol.com>
Rendered body type: text/plain

According to the information in the well written PANSAT web pages, the whole
thing is a series of student projects. They reported having only a brief time
in each orbit to perform uploads, and receive telemetry and diagnostics.
Making the satellite ready for use could take a few months. They report that
only after they are satisfied with the operation will they release the user
information youre after.

The web pages also report the expected orbit life of PANSAT is on the order of
several years. The PANSAT pages at the Navy Post-graduate School make for
some wonderful reading! They left out very little in the description of the
layout of the little orbiter. The links include TAPR, ARRL, NASA and Goddard
Space Flight Center and really help with fill-in information. Check them
out!!

73,
Dave N6OJJ

9. DB products announces dual-polarization diversity 900 MHz antennas

From: Tom McDermott <Tom.McDermot@aud.alcatel.com>
Date: Mon, 16 Nov 1998 11:08:37 -0600
To: "'pcs@tapr.org'" <pcs@tapr.org>, "'ss@tapr.org'" <ss@tapr.org>
Message-ID: <01BE1151.7667F460.mcdermot@aud.alcatel.com>
Rendered body type: text/plain

In the recent issue of Wireless magazine http://www.wirelessweek.com
DB products (recently bought by Allen Telecom) has announced a new
antenna for the 896-946 MHz band. It generates both vertical and
horizontal polarization at the same time. Rated at 9 dBd gain, omnidirectional.
Antenna patterns available at http://www.decibelproducts.com
Claim is that adding horizontal polarization improves the diversity of the

signal in areas where there is a lot of poor coverage - especially for paging
and trunking uses.

Does anyone know whether there are paging or trunking systems in the
902-928 MHz band? We've seen some strong paging-like signals in this
band in Dallas - but they are technically not pagers, but another service.

Concern is that our strategy of using horizontal-polarization to knock down the
huge narrowband commercial signals by 20 dB may get impacted if these
types of antennas are deployed for this service in the amateur band.

Tom McDermott
mcdermot@aud.alcatel.com

10. Re: [SS:131] SS digest 546

From: Roger Boggs <Roger@c-spec.com>
Date: Mon, 16 Nov 1998 14:05:07 -0500
To: ss@tapr.org, ss@tapr.org
Message-ID: <199811161900.NAA21817@tapr.org>
Rendered body type: text/plain

In or near the 902-928 ISM Band, you've got paging systems that operate
with relatively immense power in the spectrum between 929 and 930 MHz and
931 to 932 MHz. You've also got the Part 94 Scada folks whose remote
radios transmit at 928 to 929 MHz and receive at 952 to 953 MHz. For the
most part all the above are vertically polarized. The FCC does grant
928/952 Part 94 SCADA licenses for horizontal polarization, but they're few
and far between.

The "paging-like" signals that you are seeing probably ARE pagers, whose
lowest frequency I believe is 929.0375 MHz. Trouble is, at 300 Watts
transmitter power and 9 dBi antenna gain, they tend splatter enough of
their own signal around that, no matter what polarity antenna you're using,
it still de-senses your receiver to your own signal.

The antenna you're talking about is probably not permitted for use in
paging or SCADA applications. It might turn out to be a great antenna for
users of the ever-congested 902-928 spread-spectrum bands. What we'll need
to go along with it now is a 20 dBi dual-polarity directional antenna to
talk back to it, eh?

Roger Boggs
C-Spec Corporation

At 12:21 PM 11/16/98 , ss@tapr.org wrote:
>   SS Digest 546
>
>Topics covered in this issue include:
>
> 1) DB products announces dual-polarization diversity 900 MHz antennas
>   by Tom McDermott <Tom.McDermot@aud.alcatel.com>
>
>--
>
>Date: Mon, 16 Nov 1998 11:08:37 -0600
>From: Tom McDermott <Tom.McDermot@aud.alcatel.com>
>To: "'pcs@tapr.org'" <pcs@tapr.org>, "'ss@tapr.org'" <ss@tapr.org>
>Subject: DB products announces dual-polarization diversity 900 MHz antennas
>Message-ID: <01BE1151.7667F460.mcdermot@aud.alcatel.com>
>
>
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>Antenna patterns available at http://www.decibelproducts.com
>Claim is that adding horizontal polarization improves the diversity of the
>signal in areas where there is a lot of poor coverage - especially for paging
>and trunking uses.
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>Does anyone know whether there are paging or trunking systems in the
>902-928 MHz band? We've seen some strong paging-like signals in this
>band in Dallas - but they are technically not pagers, but another service.
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>Concern is that our strategy of using horizontal-polarization to knock
down the
>huge narrowband commercial signals by 20 dB may get impacted if these

>types of antennas are deployed for this service in the amateur band.
>
>
>Tom McDermott
>mcdermot@aud.alcatel.com
>
>
>
>------------------------------
>
>End of SS Digest 546
>********************
>

11. Re: [SS:131] DB products announces dual-polarization diversity 900 MHz antennas

From: frussle@erols.com (Jake Brodsky)
Date: Mon, 16 Nov 1998 20:00:13 GMT
To: ss@tapr.org
Message-ID: <36518319.2709086@smtp.erols.com>
Rendered body type: text/plain

On Mon, 16 Nov 1998 11:12:29 -0600 (CST), you wrote:

>In the recent issue of Wireless magazine http://www.wirelessweek.com
>DB products (recently bought by Allen Telecom) has announced a new
>antenna for the 896-946 MHz band. It generates both vertical and
>horizontal polarization at the same time. Rated at 9 dBd gain, omnidirectional.
>Antenna patterns available at http://www.decibelproducts.com
>Claim is that adding horizontal polarization improves the diversity of the
>signal in areas where there is a lot of poor coverage - especially for paging
>and trunking uses.
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>Does anyone know whether there are paging or trunking systems in the
>902-928 MHz band? We've seen some strong paging-like signals in this
>band in Dallas - but they are technically not pagers, but another service.
>
>Concern is that our strategy of using horizontal-polarization to knock down the
>huge narrowband commercial signals by 20 dB may get impacted if these
>types of antennas are deployed for this service in the amateur band.

This is very bad news if these antennas become popular. Not only do
hams use this technique, so do MAR telemetry users on the 928/952 MHz
band.

I'll mention this to our staff today.

Jake Brodsky, mailto:frussle@erols.com
"Nearly fifty percent of all graduates came from
the bottom half of the class."

12. Re: [SS:132] Re: SS digest 546

From: Lester.Veenstra@comsat.com
Date: Mon, 16 Nov 1998 15:49:36 -0500
To: ss@tapr.org
Message-ID: <000C747B.3332@comsat.com>
Rendered body type: text/plain

This sounds like a job for good old faithful HELIX.

> "The antenna you're talking about is probably not permitted for use in
> paging or SCADA applications. It might turn out to be a great antenna
> for users of the ever-congested 902-928 spread-spectrum bands. What
> we'll need to go along with it now is a 20 dBi dual-polarity
> directional antenna to talk back to it, eh?"

13. Re: [SS:131] DB products announces dual-polarization diversity 900 MHz antennas

From: "Tony McConnell" <n3jly@erols.com>
Date: Tue, 17 Nov 1998 07:17:48 -0500
To: <ss@tapr.org>
Message-ID: <01be1224$4a55eb60$0107640a@spanky>
Rendered body type: text/plain

>In the recent issue of Wireless magazine http://www.wirelessweek.com
>DB products (recently bought by Allen Telecom) has announced a new
>antenna for the 896-946 MHz band. It generates both vertical and
>horizontal polarization at the same time. Rated at 9 dBd gain,
omnidirectional.
>Antenna patterns available at http://www.decibelproducts.com

>Claim is that adding horizontal polarization improves the diversity of the
>signal in areas where there is a lot of poor coverage - especially for
paging
>and trunking uses.

i work for a utility in maryland in the washington dc area.
we are very concerned about these antennas. over the last few years
we have been changing from vertical polarization to horizontal. That
seemed to be the only way to deal with 929-932 paging while we are
using 928/952 split telemetry. I've looked at some paging licenses for
PCP(929mhz) paging and they are currently not licensed for horizontal
polarization, but...

14. Re: [SS:132] Re: SS digest 546

From: frussle@erols.com (Jake Brodsky)
Date: Tue, 17 Nov 1998 19:49:15 GMT
To: ss@tapr.org
Message-ID: <3652d06c.264235@smtp.erols.com>
Rendered body type: text/plain

On Mon, 16 Nov 1998 13:07:16 -0600 (CST), you wrote:

<snip>
>The antenna you're talking about is probably not permitted for use in
>paging or SCADA applications.
<snip>

Uhhh, guess again. At work I run a Part 94 (MAR) SCADA system which
is deliberately licensed and operated using horizontal polarization.

Never fear, it's limited to 45 WEIRP. The SCADA users aren't the ones
hams should worry about. It's those high power paging transmitters on
929 MHz. We selected horizontal polarization for the same reason one
would in ham radio: We get clobbered with IMD if we don't.

By the way, if you're wondering what a horizontally polarized
omnidirectional antenna looks like, think waveguide, oriented
vertically, with slots...

Jake Brodsky, AB3A
and also Control Systems Analyst,
Washington Suburban Sanitary Commission

15. PANSAT

From: Darryl Smith <vk2tds@ozemail.com.au>
Date: Tue, 17 Nov 1998 19:38:45 +1100
To: ss@tapr.org
Message-ID: <36513614.8720A241@ozemail.com.au>
Rendered body type: text/plain

Hi....

There was a question a few days ago about PanSAT - The new Spread Spectrum
Satellite. From my memory of Spread Spectrum theory, the design of the RF gear can
be standard PSK transmitting and recieving gear, with a slight modification.

On the recieve side, a mixer will prob. be needed on the front end between the
antenna and the reciever. This mixer would be controlled by the PN generator on the
SS decoder chip (if the PA-100 is used)

Transmit would need the same, but be able to cope with higher powers.

This may however be easier by hacking your radio.

This will be an interesting thing to see working, as the recieve synchronisation
can be a real problem. This is especially true when there are a number of users
wanting to use the station. I imagine that a decent amount of CPU power will be
needed for the encoding and decoding....

For those in the know - What will the chipping rate be (approx)?

Then again it is 3 years since I have touched any SS hardware so my ideas could be
way off.

Darryl VK2TDS
Sydney, Australia

16. Re: PANSAT

From: Jeffrey Austen <jausten@tntech.edu>
Date: Wed, 18 Nov 1998 09:16:44 -0600
To: ss@tapr.org
Message-ID: <l03130301b2788c0c7f1a@[149.149.39.26]>
Rendered body type: text/plain

A few years ago we did some class projects based on the PANSAT signal
structure. Here are the basic specifications as we understood them at that
time. All of this information was obtained from the papers and reports
available at the Navy's NPS PANSAT web site.

Modulation: Direct Sequence Spread Spectrum
Carrier Frequency: 436.5 MHz
Spreading Sequence: Seven Stage Linear Feedback Shift Register
             (Creates periodic "pseudo random" sequence of length 127 chips)
Chip Rate: 1.25 Mc/s
Bit Rate: approx. 9842 b/s (1 bit per 127 chips, aligned with the
             spreading sequence "code")
Modulation: PSK
Protocol: Half-Duplex ARQ (based on AX.25 packets)

Generating the SS signal is easy to do. The entire sequence generator can
be built into one standard PAL. Combine that with a mixer and an RF
oscillator to make a basic transmitter.

Receiving is also easy, once synchronization has been obtained.
Synchronization is the hard part! Both code phase and carrier phase must be
obtained (alternatively, a differential PSK demodulator could be used but
Doppler must first be removed as the frequency shift is too large for that
demodulator to handle). It is not necessary to obtain synchronization for
the data bits as that is provided by the code phase because the data is
aligned with the code.

Note that because the system is basically a spread-spectrum packet radio
the synchronization must be done quickly, at the beginning of every packet.
This makes the task a bit more difficult. It may be possible to use
knowledge of the code rate and phase to obtain quicker synchronization on
subsequent packets once it has been obtained on the first; however, I have
not analyzed the error sources to see if this is feasible.

The RF stages are no problem and commercial radios or transverters may be
used. The only requirement is that they have sufficient bandwidth (approx.
2.5 MHz) to pass the spread spectrum signal.

Unfortunately, although most of the basic functionality was completed, the
projects never got to a state where there was a completed, usable
demodulator. During the course of the project several different approaches
were analyzed and two specific demodulators were designed and built. A test
transmitter was also built. I will be happy to discuss the merits of
different approaches, design details of the demodulators, and make
available complete details on the test transmitter for anybody who is
interested.

Jeff, k9ja

Jeffrey Austen | Tennessee Technological University
jausten@tntech.edu | Box 5004
+1-931-372-3485 | Cookeville Tennessee 38505   U.S.A.

17. Re: [SS:138] SS digest 548

From: Roger Boggs <Roger@c-spec.com>
Date: Wed, 18 Nov 1998 14:03:42 -0500
To: ss@tapr.org, ss@tapr.org
Message-ID: <199811181858.MAA16660@tapr.org>
Rendered body type: text/plain

Yes indeed, horizontal polarization IS permitted for SCADA applications.
Done it numerous times. Two popular omnidirectional antennas are the
Paraslot from Scala, and a cute little 8 dBi omni from Olde Antenna Lab in
Colorado, I believe.

The antenna that folks were talking about was a dual polarity version, and
I believe that you've got to declare one way or the other on your Part 94
license application.

Roger Boggs
C-Spec Corporation
www.overlan.com

At 12:25 PM 11/18/98 , ss@tapr.org wrote:
>   SS Digest 548
>
>Topics covered in this issue include:
>
> 1) Re: SS digest 546
>   by frussle@erols.com (Jake Brodsky)
> 2) PANSAT
>   by Darryl Smith <vk2tds@ozemail.com.au>
> 3) Re: PANSAT
>   by Jeffrey Austen <jausten@tntech.edu>
>
>--
>
>Date: Tue, 17 Nov 1998 19:49:15 GMT
>From: frussle@erols.com (Jake Brodsky)
>To: ss@tapr.org
>Subject: Re: SS digest 546
>Message-ID: <3652d06c.264235@smtp.erols.com>
>
>On Mon, 16 Nov 1998 13:07:16 -0600 (CST), you wrote:
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>>paging or SCADA applications.
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>is deliberately licensed and operated using horizontal polarization.
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>Never fear, it's limited to 45 WEIRP. The SCADA users aren't the ones
>hams should worry about. It's those high power paging transmitters on
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>would in ham radio: We get clobbered with IMD if we don't.
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>and also Control Systems Analyst,
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>From: Darryl Smith <vk2tds@ozemail.com.au>
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>Subject: PANSAT
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>For those in the know - What will the chipping rate be (approx)?
>

>Then again it is 3 years since I have touched any SS hardware so my ideas
could be
>way off.
>
>Darryl VK2TDS
>Sydney, Australia
>
>
>
>
>------------------------------
>
>Date: Wed, 18 Nov 1998 09:16:44 -0600
>From: Jeffrey Austen <jausten@tntech.edu>
>To: ss@tapr.org
>Subject: Re: PANSAT
>Message-ID: <l03130301b2788c0c7f1a@[149.149.39.26]>
>
>A few years ago we did some class projects based on the PANSAT signal
>structure. Here are the basic specifications as we understood them at that
>time. All of this information was obtained from the papers and reports
>available at the Navy's NPS PANSAT web site.
>
>Modulation: Direct Sequence Spread Spectrum
>Carrier Frequency: 436.5 MHz
>Spreading Sequence: Seven Stage Linear Feedback Shift Register
>   (Creates periodic "pseudo random" sequence of length 127 chips)
>Chip Rate: 1.25 Mc/s
>Bit Rate: approx. 9842 b/s (1 bit per 127 chips, aligned with the
>   spreading sequence "code")
>Modulation: PSK
>Protocol: Half-Duplex ARQ (based on AX.25 packets)
>
>Generating the SS signal is easy to do. The entire sequence generator can
>be built into one standard PAL. Combine that with a mixer and an RF
>oscillator to make a basic transmitter.
>
>Receiving is also easy, once synchronization has been obtained.
>Synchronization is the hard part! Both code phase and carrier phase must be
>obtained (alternatively, a differential PSK demodulator could be used but
>Doppler must first be removed as the frequency shift is too large for that
>demodulator to handle). It is not necessary to obtain synchronization for
>the data bits as that is provided by the code phase because the data is
>aligned with the code.
>
>Note that because the system is basically a spread-spectrum packet radio
>the synchronization must be done quickly, at the beginning of every packet.
>This makes the task a bit more difficult. It may be possible to use
>knowledge of the code rate and phase to obtain quicker synchronization on
>subsequent packets once it has been obtained on the first; however, I have
>not analyzed the error sources to see if this is feasible.
>
>The RF stages are no problem and commercial radios or transverters may be
>used. The only requirement is that they have sufficient bandwidth (approx.
>2.5 MHz) to pass the spread spectrum signal.
>
>Unfortunately, although most of the basic functionality was completed, the
>projects never got to a state where there was a completed, usable
>demodulator. During the course of the project several different approaches
>were analyzed and two specific demodulators were designed and built. A test
>transmitter was also built. I will be happy to discuss the merits of
>different approaches, design details of the demodulators, and make
>available complete details on the test transmitter for anybody who is
>interested.
>
>Jeff, k9ja
>
>---
>Jeffrey Austen | Tennessee Technological University
>jausten@tntech.edu | Box 5004
>+1-931-372-3485 | Cookeville Tennessee 38505   U.S.A.
>
>
>
>------------------------------
>
>End of SS Digest 548
>********************
>

18. Re: [SS:139] Re: SS digest 548

From: "Steve Sampson" <ssampson@usa-site.net>
Date: Wed, 18 Nov 1998 19:16:32 -0600
To: <ss@tapr.org>
Message-ID: <002d01be135a$3e7b3980$87228cd1@dodge.usa-site.net>
Rendered body type: text/plain

How hard would it be to take the TAPR project up to 1.2 GHz?
How much design effort thrown out?

The more I learn about part 15 the more I'm not interested.

That way you can get rid of the non-programmable hop code
feature, and target 5 watts or so.

Steve

-----Original Message-----
From: Roger Boggs <Roger@c-spec.com>
To: ss@tapr.org <ss@tapr.org>
Date: Wednesday, November 18, 1998 2:24 PM
Subject: [SS:139] Re: SS digest 548

>Yes indeed, horizontal polarization IS permitted for SCADA applications.
>Done it numerous times

19. Re: [SS:140] Re: SS digest 548

From: mdmiller@eaze.net
Date: Wed, 18 Nov 1998 21:35:39 -0600
To: ss@tapr.org
Message-ID: <3.0.5.32.19981118213539.007d87d0@mail.eaze.net>
Rendered body type: text/plain

The TAPR SS radio has non-programmable hop codes? I have used many part 15
devices that had programmable hop codes.

73
Mark Miller
N5RFX

At 07:24 PM 11/18/98 -0600, you wrote:
>How hard would it be to take the TAPR project up to 1.2 GHz?
>How much design effort thrown out?
>
>The more I learn about part 15 the more I'm not interested.
>
>That way you can get rid of the non-programmable hop code
>feature, and target 5 watts or so.
>
>Steve

20. RE: 141] Re: SS digest 548

From: Tom McDermott <Tom.McDermot@aud.alcatel.com>
Date: Thu, 19 Nov 1998 08:16:37 -0600
To: "'ss@tapr.org'" <ss@tapr.org>
Message-ID: <01BE1394.EE044F60.mcdermot@aud.alcatel.com>
Rendered body type: text/plain

Programmability of hop codes is controlled not by the FCC, but
rather by the US Department of Commerce, under the Export
Administration Regulations (EAR). The choice of service
(part 15, part 97), or the choice of band is irrelevant. The hop
codes may only be programmable if the radio is not exported in an
uncontrolled fashion from the USA. If the radio is exported from
the USA, then DOC regulations make it unlawful to allow modification
of the hop code sequences by the user, or required full compliance
with the EAR (which is extremely difficult, complicated, and expensive).
Further, it is unlawful to sell the equipment to any person on the
US government 'Denied Persons List'.

The Commerce Controlled List, prohibits the uncontrolled export of equipment
and the sale of equipment to anyone on the 'Denied Persons List'

Section 5A001.b.8 reads:

b.8.   Being radio equipment employing "spread spectrum" or "frequency agility"
(frequency hopping) techniques have any of the following characteristics:

b.8.a User programmable spreading codes; or

b.8.b A total transmitted bandwidth that is 100 or more times the bandwidth of any one information channel and in excess of 50 kHz.

Sorry, I don't make the rules, I just follow them.

Tom McDermott
mcdermot@aud.alcatel.com

-----Original Message-----
From: mdmiller@eaze.net [SMTP:mdmiller@eaze.net]
Sent: Wednesday, November 18, 1998 9:41 PM
To: ss@tapr.org
Subject: [SS:141] Re: SS digest 548

The TAPR SS radio has non-programmable hop codes? I have used many part 15 devices that had programmable hop codes.

73
Mark Miller
N5RFX

At 07:24 PM 11/18/98 -0600, you wrote:
>How hard would it be to take the TAPR project up to 1.2 GHz?
>How much design effort thrown out?
>
>The more I learn about part 15 the more I'm not interested.
>
>That way you can get rid of the non-programmable hop code
>feature, and target 5 watts or so.
>
>Steve

21. DRSI card Broken

From: "Vittorio Moretti" <ik4iro@amsat.org>
Date: Thu, 19 Nov 1998 23:36:25 +0100
To: <ss@tapr.org>, <dsp@tapr.org>, <amsat-bb@amsat.org>
Message-ID: <004301be140d$301ba100$cf1acfc1@orso>
Rendered body type: text/plain

I have a DRSI card rev 10-89 broken.
I need a schematic or the techical manual, can somebody help me?
Thank's.
73 ik4iro Vittorio

22. Re: [SS:142] RE: 141] Re: SS digest 548

From: mdmiller@eaze.net
Date: Thu, 19 Nov 1998 22:16:48 -0600
To: ss@tapr.org
Message-ID: <3.0.5.32.19981119221648.00835930@mail.eaze.net>
Rendered body type: text/plain

Tom,
Thank you for your response and your hard work on this project. I still don't understand why the hop codes cannot be programmable. I live in Arlinton TX and do not plan to export any SS products. However, if I am not allowed to program the hop codes like I can any any commercially available part 15 device, I will not be purchasing the TAPR SS kit, which will be quite disappointing.

Mark Miller
N5RFX

>Sorry, I don't make the rules, I just follow them.
>
>Tom McDermott
>mcdermot@aud.alcatel.com
5

23. Re: hopping choices (renamed)

From: "Robert B. Morgan" <morganb@inetport.com>
Date: Thu, 19 Nov 1998 23:43:08
To: ss@tapr.org

Message-ID: <3.0.1.16.19981119234308.1f87fdbe@inetport.com>
Rendered body type: text/plain

Mark and Tom both,

Are we laboring under some semantics? I seem to recall playing with the Freewave units last year (seems like a long time anyhow) that they did have a choice of hopping patterns, or at least some addressing. But we CERTAINLY didn't have control over or even knowledge of what the hopping patterns were, only that we had a choice of some predetermined patterns from a predetermined factory list that was hardcoded. So that does give us a choice, but we certainly didn't know what we are choosing when we chose, and it may be semantics over whether we call it "programming".

What if the list were long enough to contain all the permutations of the hopping patterns? Aside from the fact that it would be a long list, are there any other limits so that it wouldn't be confused with a nuclear weapon by the DoC?

What would be the implications of having it manufactured outside of the US, aside from a messy manufacturing managament headache for TAPR? Or if we were to have a domestic and an export model, which I assume would be different firmware?

73 de Bob WB5AOH
Austin, Texas
morganb@inetport.com

At 10:20 PM 11/19/98 -0600, you wrote:
>Tom,
>Thank you for your response and your hard work on this project. I still
>don't understand why the hop codes cannot be programmable. I live in
>Arlinton TX and do not plan to export any SS products. However, if I am
>not allowed to program the hop codes like I can any any commercially
>available part 15 device, I will not be purchasing the TAPR SS kit, which
>will be quite disappointing.
>
>Mark Miller
>N5RFX
>
>>Sorry, I don't make the rules, I just follow them.
>>
>>Tom McDermott
>>mcdermot@aud.alcatel.com
>5
>
>

24. RE: 145] Re: hopping choices (renamed)

From: Donald Newman <dnewman@c-map.it>
Date: Fri, 20 Nov 1998 09:59:32 +0100
To: "'ss@tapr.org'" <ss@tapr.org>
Message-ID: <01BE146C.7A871850@ws63.c-map.lan>
Rendered body type: text/plain

All,

We are currently using the Xetron Hummingbird OEM SS module and have also looked at the Freewave. Both provide "programmable" hop patterns as described by Robert:
>"...we had a choice of some predetermined patterns
>from a predetermined factory list that was hardcoded..."

As he suggested there are in fact two models of the Freewave one for US domestic use and one for export. The Xetron on the other hand is only legal for US applications. C-Map is multinational and we would like to be able to use the cheaper Xetron in Europe as well, but we can't.

(Are there any other similar OEM products, with sensitivity -105dBM or better ??)

Regards,
Donald Newman

C-Map
Special Projects Dept.
dnewman@c-map.it
+39 0585 772466

-----Original Message-----
From: Robert B. Morgan [SMTP:morganb@inetport.com]
Sent: venerdì 20 novembre 1998 6.55

To: ss@tapr.org
Subject: [SS:145] Re: hopping choices (renamed)

Mark and Tom both,

Are we laboring under some semantics? I seem to recall playing with the
Freewave units last year (seems like a long time anyhow) that they did
have a choice of hopping patterns, or at least some addressing. But we
CERTAINLY didn't have control over or even knowledge of what the hopping
patterns were, only that we had a choice of some predetermined patterns
from a predetermined factory list that was hardcoded. So that does give
us a choice, but we certainly didn't know what we are choosing when we
chose, and it may be semantics over whether we call it "programming".

What if the list were long enough to contain all the permutations of the
hopping patterns? Aside from the fact that it would be a long list,
are there any other limits so that it wouldn't be confused with a nuclear
weapon by the DoC?

What would be the implications of having it manufactured outside of the US,
aside from a messy manufacturing managament headache for TAPR? Or if
we were to have a domestic and an export model, which I assume would
be different firmware?

73 de Bob WB5AOH
Austin, Texas
morganb@inetport.com

At 10:20 PM 11/19/98 -0600, you wrote:
>Tom,
>Thank you for your response and your hard work on this project. I still
>don't understand why the hop codes cannot be programmable. I live in
>Arlinton TX and do not plan to export any SS products. However, if I am
>not allowed to program the hop codes like I can any any commercially
>available part 15 device, I will not be purchasing the TAPR SS kit, which
>will be quite disappointing.
>
>Mark Miller
>N5RFX
>
>>Sorry, I don't make the rules, I just follow them.
>>
>>Tom McDermott
>>mcdermot@aud.alcatel.com
>5
>
>

25. Re: [SS:145] Re: hopping choices (renamed)

From: mdmiller@eaze.net
Date: Fri, 20 Nov 1998 07:05:55 -0600
To: ss@tapr.org
Message-ID: <3.0.5.32.19981120070555.0084b420@mail.eaze.net>
Rendered body type: text/plain

I think Bob is correct. I might be confusing total programmability with
limited programmability. I think that a list of hopping codes would be
quite acceptable. I was concerned that we would end up with a SS radio
that had a fixed hopping sequence. I hope that what Tom and team are
developing is a radio with hopping choices.

At 11:55 PM 11/19/98 -0600, you wrote:
>Mark and Tom both,
>
>Are we laboring under some semantics? I seem to recall playing with the
>Freewave units last year (seems like a long time anyhow) that they did
>have a choice of hopping patterns, or at least some addressing. But we
>CERTAINLY didn't have control over or even knowledge of what the hopping
>patterns were, only that we had a choice of some predetermined patterns
>from a predetermined factory list that was hardcoded. So that does give
>us a choice, but we certainly didn't know what we are choosing when we
>chose, and it may be semantics over whether we call it "programming".
>
>What if the list were long enough to contain all the permutations of the
>hopping patterns? Aside from the fact that it would be a long list,
>are there any other limits so that it wouldn't be confused with a nuclear
>weapon by the DoC?
>

>What would be the implications of having it manufactured outside of the US,
>aside from a messy manufacturing managament headache for TAPR? Or if
>we were to have a domestic and an export model, which I assume would
>be different firmware?
>
>73 de Bob WB5AOH
>Austin, Texas
>morganb@inetport.com
>
>At 10:20 PM 11/19/98 -0600, you wrote:
>>Tom,
>>Thank you for your response and your hard work on this project. I still
>>don't understand why the hop codes cannot be programmable. I live in
>>Arlinton TX and do not plan to export any SS products. However, if I am
>>not allowed to program the hop codes like I can any any commercially
>>available part 15 device, I will not be purchasing the TAPR SS kit, which
>>will be quite disappointing.
>>
>>Mark Miller
>>N5RFX
>>
>>>Sorry, I don't make the rules, I just follow them.
>>>
>>>Tom McDermott
>>>mcdermot@aud.alcatel.com
>>5
>>
>>
>
>
>
73
Mark Miller
N5RFX

26. Re: [SS:144] RE: 141] Re: SS digest 548

From: "Steve Sampson" <ssampson@usa-site.net>
Date: Fri, 20 Nov 1998 07:17:59 -0600
To: <ss@tapr.org>
Message-ID: <002101be1488$31c2a460$87228cd1@dodge.usa-site.net>
Rendered body type: text/plain

It doesn't matter what YOU plan to do, it's what the manufacturer plans to do.
Does TAPR plan to export? Evidently yes.

If you plan to export, then the US requires that they be able to monitor them
with standard equipment in the field. All laws of these type are developed by
the NSA and FBI which dumb down the enemy.

Which Part 15 device allows you to program the hop codes?

Steve

-----Original Message-----
From: mdmiller@eaze.net <mdmiller@eaze.net>
To: ss@tapr.org <ss@tapr.org>
Date: Thursday, November 19, 1998 11:00 PM
Subject: [SS:144] RE: 141] Re: SS digest 548

>Tom,
>Thank you for your response and your hard work on this project. I still
>don't understand why the hop codes cannot be programmable. I live in
>Arlinton TX and do not plan to export any SS products. However, if I am
>not allowed to program the hop codes like I can any any commercially
>available part 15 device, I will not be purchasing the TAPR SS kit, which
>will be quite disappointing.
>
>Mark Miller
>N5RFX
>
>>Sorry, I don't make the rules, I just follow them.
>>
>>Tom McDermott
>>mcdermot@aud.alcatel.com
>5

27. Re: [SS:146] RE: 145] Re: hopping choices (renamed)

From: Dewayne Hendricks <dewayne@warpspeed.com>
Date: Fri, 20 Nov 1998 09:41:54 -0800
To: ss@tapr.org
Message-ID: <v04102f11b27b58de6476@[192.168.1.7]>
Rendered body type: text/plain

At 3:02 -0600 11/20/98, Donald Newman wrote:
> As he suggested there are in fact two models of the Freewave one for US
> domestic use and one for export. The Xetron on the other hand is only
> legal for US applications. C-Map is multinational and we would like to
> be able to use the cheaper Xetron in Europe as well, but we can't.

        The export model of the Freewave radio has hopping freq which avoid the GSM services in the 902-928 MHz band in those parts of the world that use GSM in those frequencies. I used this version of their product for a project in Mongolia a couple of years ago.

-- Dewayne
--
~~~~~~
Dewayne Hendricks, WA8DZP ! Internet: dewayne@warpspeed.com
Warp Speed Imagineering   ! Packet Radio: WA8DZP @ K3MC.#NOCAL.CA.USA.NOAM
43730 Vista Del Mar   ! WWW: <http://www.warpspeed.com/>
Fremont, CA 94539-3204   !
Fax: (510) 770-9854   !
~~~~~~

28. Re: [SS:149] RE: 145] Re: hopping choices (renamed)

From: Matthias Weingart <matthias@penthouse.boerde.de>
Date: Fri, 20 Nov 1998 19:51:02 +0100 (MET)
To: ss@tapr.org
Message-ID: <Pine.LNX.3.95.981120194344.29233A-100000@penthouse.boerde.de>
Rendered body type: text/plain

Could somebody please post the url's where I can get info's to the
freewave radio? I think the 900MHz band is not available in Europe for
ISM.

Matthias

On Fri, 20 Nov 1998, Dewayne Hendricks wrote:

> At 3:02 -0600 11/20/98, Donald Newman wrote:
> > As he suggested there are in fact two models of the Freewave one for US
> > domestic use and one for export. The Xetron on the other hand is only
> > legal for US applications. C-Map is multinational and we would like to
> > be able to use the cheaper Xetron in Europe as well, but we can't.
>
>   The export model of the Freewave radio has hopping freq which avoid
> the GSM services in the 902-928 MHz band in those parts of the world that
> use GSM in those frequencies. I used this version of their product for a
> project in Mongolia a couple of years ago.
>
> -- Dewayne
> --
> ~~~~~~
> Dewayne Hendricks, WA8DZP ! Internet: dewayne@warpspeed.com
> Warp Speed Imagineering   ! Packet Radio: WA8DZP @ K3MC.#NOCAL.CA.USA.NOAM
> 43730 Vista Del Mar   ! WWW: <http://www.warpspeed.com/>
> Fremont, CA 94539-3204   !
> Fax: (510) 770-9854   !
> ~~~~~~
>
>

29. Re: [SS:148] RE: 141] Re: SS digest 548

From: mdmiller@eaze.net
Date: Fri, 20 Nov 1998 17:51:44 -0600
To: ss@tapr.org
Message-ID: <3.0.5.32.19981120175144.00850920@mail.eaze.net>
Rendered body type: text/plain

>It doesn't matter what YOU plan to do, it's what the manufacturer plans to
do.
>Does TAPR plan to export? Evidently yes.

>Which Part 15 device allows you to program the hop codes?

The FreeWave DGR-115/115H has 15 User Selectable Hop Patterns. I think I misunderstood the origional statement and thought that the TAPR SS radio would not give the user any choice of hopping patterns.

73
Mark Miller
N5RFX

30. Re: [SS:148] RE: 141] Re: SS digest 548

From: dwayne <ddraig@pobox.com>
Date: Sat, 21 Nov 1998 17:50:02 +1100
To: ss@tapr.org
Message-ID: <36566299.613B00C4@pobox.com>
Rendered body type: text/plain

Steve Sampson wrote:

> If you plan to export, then the US requires that they be able to monitor them
> with standard equipment in the field. All laws of these type are developed by
> the NSA and FBI which dumb down the enemy.

Is this the case even with friendly enemies like Australia?
If so it's very annoying.

Is there anyone in Australia on this list, by the way? I'm in Melbourne and am looking to set up a spread-spectrum network across Melbourne with some friends. We're not sure the hell we are doing, I just thought it would be a nifty idea and I'm tired of slow modems.

Unfortunately, our experience lies in computer networking, not radio :-/

I am beginning to see the learning curve stretching up before me. It looks steep.

I have looked over a thesis by a guy from UTS, does anyone know what this person is up to nowadays?

Dwayne
--
mailto:ddraig@pobox.com   http://i.am/dwayne
"to push the hacking:sex analogy a bit further:
Most users are chaste, innocent country girls
who blush & lower their eyes when they see a boy,
holding hands is the most they've ever done, and
they think that kissing can make you pregnant.
you mc, on the other hand, are a dungeonmaster in
leather sm gear, spikes everywhere, tattooed &
pierced, ready to tie down, fist & whip your
partner with a squid while listening to laibach at
full volume"<eu@tom-b.com referring to mc@hack.org>

31. 1998 ARRL and TAPR DCC Audio, Photos, Abstracts, and More

From: "Greg Jones, WD5IVD" <wd5ivd@tapr.org>
Date: Mon, 30 Nov 1998 15:25:13 -0600
To: "HF SIG list   mailing"<hfsig@tapr.org>, " Spread Spectrum "<ss@tapr.org>,
        " TAPR/AMSAT DSP "<dsp@tapr.org>,
        "APRS SIG list   mailing"<aprssig@tapr.org>,
        "NETSIG list   mailing"<netsig@tapr.org>,
        "BBS SIG list   mailing"<bbssig@tapr.org>,
        " tacgps "<tacgps@tapr.org>, aprsnews, mic-e,
        TAPR Regional Freq <regional_freq@tapr.org>,
        "TAPR-BB list   mailing"<tapr-bb@tapr.org>
Message-ID: <v04020a06b288bb17413f@[128.83.74.104]>
Rendered body type: text/plain

The ARRL and TAPR DCC Web page has been updated to include all recorded segments from the conference as well as a story and photo section.

Visit: http://www.tapr.org/dcc/

* Listen to sessions from the 1998 ARRL and TAPR DCC over 30 hours covering
        Keynote by Dale Hatfield, W0IFO
                Chief of the FCC's Office of Engineering and Technology
        APRS National Symposium
        Packet Radio Users Group of Japan (PRUG) Technical Seminar
        Technical Paper Presentations

```
        Introductory Sessions
                Introduction to Spread Spectrum
                Introduction to PIC Development
                Introduction to MMDS/LMDS
        Friday Technical Seminar featuring Don Lemke, WB9MJN on
                Infrastructureless Packet Radio Networks
        Sunday Technical Seminars featuring:
                Lyle Johnson, WA7GXD -
                        RUDAK digital communications system
                Tim Shepard, KD1YK  -
                        Packet Radio Networks with Millions or Billions of
Stations


* 1998 Conference Overview Story

* Look at photos from the 1998 ARRL and TAPR DCC

* Review Abstracts from 1998 Proceedings

* Check out past Digital Communication Conferences Audio and Abstracts


as of now, the 1999 ARRL and TAPR DCC will be hosted in Phoenix, AZ in Sept
'99.  More information will be posted once a date and location has been
decided.

-------------------------------------------------------------------------------
Tucson Amateur Packet Radio
8987-309 E Tanque Verde Rd #337 * Tucson, Az * 85749-9399
-------------------------------------------------------------------------------
e-mail: tapr@tapr.org       web: <http://www.tapr.org/>
ftp:    ftp.tapr.org
phone:  940-383-0000        fax: 940-565-2544
-------------------------------------------------------------------------------
```

December 1998

Original source file: ss.9812
Source: http://ftp.tapr.org/tapr_history/SIG_Archives/spread-spectrum-sig/mail_archive/ss.9812

1. Starting on N6GN's microwave project

From: "Hamoperator SM7UGT Marcel bos" <sm1ugt@hotmail.com>
Date: Sat, 05 Dec 1998 03:34:08 PST
To: ss@tapr.org
Message-ID: <19981205113408.7499.qmail@hotmail.com>
Rendered body type: text/plain

go www.abc.se/~m8114/hamradio where I try to
concentrate The N6GN project parts in A-Z

However There is a problem - We need help with the Ethernet
interfacing..

>
>Looking at the N6GN project and can't locate these parts:
>
>MC13055 FSK RECEIVER IC
>SRA-1 MIXER
>MC10116 LINE RECEIVER IC
>
>Can anyone help out locating these parts and how much they cost?
>
>James KD4DLA
>
>

_____
Get Your Private, Free Email at http://www.hotmail.com

2. development boards

From: Ricardo Rodrigues De Araujo <rra@fee.unicamp.br>
Date: Tue, 15 Dec 1998 11:17:30 -0200 (EDT)
To: ss@tapr.org
Message-ID: <Pine.GSO.3.95.981215111027.21957A-100000@berilio.fee.unicamp.br>
Rendered body type: text/plain

I am looking for a development board for spread spectrum chip sets. At the
moment i only found the harris chip set development board. Does anybody
know others development board or kit for spread spectrum ICs?

Thanks

3. Re: [SS:155] development boards

From: Dewayne Hendricks <dewayne@warpspeed.com>
Date: Tue, 15 Dec 1998 06:17:57 -0800
To: ss@tapr.org
Message-ID: <v04103618b29c1fc8c6bf@[192.168.1.7]>
Rendered body type: text/plain

At 7:12 -0600 12/15/98, Ricardo Rodrigues De Araujo wrote:
> I am looking for a development board for spread spectrum chip sets. At the
> moment i only found the harris chip set development board. Does anybody
> know others development board or kit for spread spectrum ICs?

Check here for an article that looks at the Harris, AMI,
Sirius Communications and Stanford Telecom eval boards:

<http://sss-mag.com/whatsnew/nuindex.html#2>

-- Dewayne
--
~~~~~~
Dewayne Hendricks, WA8DZP ! Internet: dewayne@warpspeed.com
Warp Speed Imagineering   ! Packet Radio: WA8DZP @ K3MC.#NOCAL.CA.USA.NOAM
43730 Vista Del Mar   ! WWW: <http://www.warpspeed.com/>
Fremont, CA 94539-3204   !
Fax: (510) 770-9854   !
~~~~~~

4. Re: [SS:155] development boards

From: "Derek J. Lassen" <kn6td@clubnet.net>
Date: Wed, 16 Dec 1998 01:34:39 -0800
To: ss@tapr.org
Message-ID: <1298321081-23416427@mail.clubnet.net>
Rendered body type: text/plain

Zilog has a dev. kit for the z2000.
It contains a z2000, z182, SRAM and FLASH.
It is ISA form factor, though it can be used stand alone.

At 07:12 AM 12/15/98 -0600, you wrote:
>
>I am looking for a development board for spread spectrum chip sets. At the
>moment i only found the harris chip set development board. Does anybody
>know others development board or kit for spread spectrum ICs?
>
>
>Thanks
>

5. Re: [SS:2023] Re: Starting on N6GN's microwave project

From: "Hamoperator SM7UGT Marcel bos" <sm1ugt@hotmail.com>
Date: Wed, 16 Dec 1998 12:22:05 PST
To: ss@tapr.org
Message-ID: <19981216202206.27730.qmail@hotmail.com>
Rendered body type: text/plain

Hi Marcel here.. happy Xmas and so on!

For my webpage I have some qestions to ask.

Do you know anyone who have rised the baudrate on the link it yet?

I have just seen some people talking about it, but no suggestions
in where to tune in..

Other qestions are what Networking cards will fit to it - if not besides
the PI2 Card..

I am where you leaved me lastime.. I've got an Laser pointer.. Have
found a good deal on Astra Offset screens they are 200 Kr each :)

will go to the hardware store tomorrow - I gonna buy a aluminium profile
for the outdoor modules..

/Marcel

_____
Get Your Private, Free Email at http://www.hotmail.com

6. Article on UWB in NYT

From: Dewayne Hendricks <dewayne@warpspeed.com>
Date: Mon, 21 Dec 1998 07:08:23 -0800
To: ss@tapr.org (TAPR SS Mailing List)
Message-ID: <v0410361bb2a41445028c@[192.168.1.7]>
Rendered body type: text/plain

See the URL below for a pointer to a story on Ultra Wideband
Band technologies written by John Markoff which appeared in today's
New York Times:

    <http://www.nytimes.com/library/tech/98/12/biztech/articles/21time.html>

TAPR is a member of an ad-hoc industry group of UWB organizations and
participated in a consensus filing on the FCC's UWB NOI on December
7th. This filing will be posted to TAPR's SS pages in the near
future.
        If you're interested in taking a look at all of the comments
that have been filed to date on this NOI, then take a look at
<http://www.uwb.org>.

-- Dewayne
--

```
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
Dewayne Hendricks, WA8DZP ! Internet: dewayne@warpspeed.com
Warp Speed Imagineering   ! Packet Radio: WA8DZP @ K3MC.#NOCAL.CA.USA.NOAM
43730 Vista Del Mar       ! WWW: <http://www.warpspeed.com/>
Fremont, CA 94539-3204    !
Fax: (510) 770-9854       !
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
```

7. Re: [SS:159] Article on UWB in NYT

```
From: "Steve Sampson" <ssampson@usa-site.net>
Date: Mon, 21 Dec 1998 11:05:09 -0600
To: <ss@tapr.org>
Message-ID: <000c01be2d04$1107de40$01404e2c@dodge.usa-site.net>
Rendered body type: text/plain
```

Marketing is kind of weak, with names like "Time Modulation."

That's actually a pretty significant achievement! Modulating
the time must cause havoc with biological systems :-)

It would seem there's just be a bunch of goo when the SWAT
team finally broke their way in...

Steve

-----Original Message-----
From: Dewayne Hendricks <dewayne@warpspeed.com>
To: ss@tapr.org <ss@tapr.org>
Date: Monday, December 21, 1998 10:25 AM
Subject: [SS:159] Article on UWB in NYT

>
> See the URL below for a pointer to a story on Ultra Wideband
>Band technologies written by John Markoff which appeared in today's
>New York Times:

8. Comments of The Ultra-Wideband Working Group - FCC Docket No. 98-153

```
From: "Greg Jones, WD5IVD" <wd5ivd@tapr.org>
Date: Tue, 22 Dec 1998 13:55:59 -0600
To: " Spread Spectrum "<ss@tapr.org>
Message-ID: <v04020a09b2a5a9aa860a@[207.43.172.66]>
Rendered body type: text/plain
```

Sorry for the delay, but I have the
Comments of The Ultra-Wideband Working Group - FCC Docket No. 98-153
posted on the TAPR SS web page.

http://www.tapr.org/ss

Cheers - Greg

Greg Jones, WD5IVD   Austin, Texas
wd5ivd@tapr.org   http://www.tapr.org/~wd5ivd

9. AMBE1000+ RFC

```
From: Charles Brain <chbrain@dircon.co.uk>
Date: Fri, 25 Dec 1998 17:11:53 +0000
To: hfsig@tapr.org, ss@tapr.org
Message-ID: <3683C759.9C160AB4@dircon.co.uk>
Rendered body type: text/plain
```

Hello Everyone,

In furtherance of my digital speech experiments, I am now laying out a
digital speech board. This board is based around the AMBE1000+ low rate Vocoder
chip.

For further details see

http://www.dvsinc.com/

I have chosen to go the chip approach mainly due to licensing concerns
over the MELP algorithm that I have been experimenting with. Plus the MELP
approach needs lots of MIPS whereas the AMBE draws 65ma max and the chip is
only one inch square.

Originally I was only going to use the board to interface to a Motorola EVM

running a parallel tone modem I am working on. However the board will have
a processor on it so would be ideal for other applications.

This is where you can help!

My current design consists of the following

```
Motorola MC14LC5480 Codec
AMBE-1000           Vocoder
PIC16C67            CPU (maybe)
MAX232              RS232 Level convertor
74HC04              Interface logic codec <-> vocoder
74HC74                "         "     "         "
74HC4060            Clock 2.048Mhz and 8Khz
7805                Voltage Regulator.
3 Xtals             as I can't find an easy way to only use one!
```

The microphone input will be balanced with a supply for an electret unit.
I think the codec is designed to interface with a telephone handset. I have added
a PTT line as well, although the chip has VAD, it also supports DTMF tone generation and
can provide comfort noise and echo cancellation (the echo cancellation is for 2 to 4 wire
hybrids and is of little use to me).

The board will power up at 2400 bps speech with no FEC, although it can be reprogrammed
via the PIC to any rate in 50 baud increments up to 9600 bps with different rates of FEC.

All the components except the Vocoder are DIP packages, the vocoder only
comes in a TQFP package. As I am configuring the chip via the PIC most of the
pins on the vocoder are either at 5v or grounded. I can't finnish the board off
until I get the TQFP packages as the PCB software does not come with a TQFP
footprint so I have had to make one and I flunked technical drawing at school
so I want to check it against an actual component!

I could have done the whole thing using SMT but it is easier to work on this way,
I don't know what people feel about this?

I have used quite a large PIC, mainly for two reasons, firstly to provide space
for future software expansion and secondly, quite a few people seem to know how
to program these chips. Hopefully someone will feel inspired into making a digital
2m radio! I think all the call control software would have to run on a separate
CPU though. It should be possible to do a radio that can do full duplex on a single
simplex channel using a Ping-Pong type protocol.

The actual board will be about 1/2 the size of the Motorola EVM. I hope to have
the first unit ready by the end of January. The vocoders should arrive the first week
of January as DVS have received the money I wired them and the chips are in stock. All the
other parts are available here in the U.K.

I have added an RS232 interface so it can be connected to the Host port of an EVM.

The parts cost should work out to about $150.

I don't want to make the board too complicated, but if anyone has any suggestions as to things
that would make it more useful to them, please let me know. So far I have laid out the Codec,
interface logic, psu parts and the RS232 interface. I have not finally decided on the CPU yet.
But I will probably use a PIC unless someone has a better idea.

The end of January time frame is for the first prototype board, the software will take a bit longer!

- Charles G4GUO

10. TEST

```
From: "Greg Jones, WD5IVD" <wd5ivd@tapr.org>
Date: Sat, 26 Dec 1998 11:20:51 -0600
To: " Spread Spectrum "<ss@tapr.org>
Message-ID: <v04020a01b2aacb5a936d@[207.43.172.66]>
Rendered body type: text/plain
```

Testing a change in the list setup.

Please IGNORE AND DELETE.

Cheers - Greg

Greg Jones, WD5IVD Austin, Texas

wd5ivd@tapr.org http://www.tapr.org/~wd5ivd

11. Proxim Symphony now supported under Linux

From: "Greg Jones, WD5IVD" <wd5ivd@tapr.org>
Date: Sun, 27 Dec 1998 15:21:42 -0600
To: " Spread Spectrum "<ss@tapr.org>
Cc: Jeff King <jeff@aerodata.net>
Message-ID: <v04020a0fb2ac553b901a@[207.43.172.66]>
Rendered body type: text/plain

This from Jeff. Had a little problem with the message.id file on the list.
Should be fixed now.

Greg

From: Jeff King <jeff@aerodata.net>
Subject: Proxim Symphony now supported under Linux

I thought this might be of interest to some on the list. The Proxim
Symphony
is a low cost (~$145 ISA street) frequency hopping 2.45ghz spread
spectrum
NIC card. It was targeted at the WINTEL market for in home wireless
networks.
Stated range is about 150 feet. Output power is lower then the Rangelan.

Web site is http://www.proxim.com

I don't have any specs on this card. I think a few on this list have
these cards. How well do they work? Is it possible to get a external
connector
on the thing?

I've not yet purchased one, but have been speaking with the author of
the driver
for some time about this support. Its here now so I think I will be
picking up a few
to see if they are useful to amateurs/Part 15 experimenters..

Regards,

Jeff wb8wka

******* lsm file ******

Begin3
Title: rl2
Version: 1.4.3
Entered-date: 10 December 1998
Description: A driver for the Proxim RangeLAN2 ISA, mini-ISA, and
Micro-ISA cards. The
7200 and 7400 PC Cards are not yet supported. Also
supports Symphony PnP ISA.
Proprietary components are in library form. Not
intended for distribution
under GPL since some parts are not available in source.
Keywords: driver kernel rl2 proxim symphony rangelan2
Author: n/a (Proxim, Inc.)
loomer@1000klub.com (Paul Chinn)
Maintained-by: davek@komacke.com (Dave Koberstein)
Primary-site: ftp://ftp.komacke.com/pub/linux/
Alternate-site: ftp://ftp.1000klub.com/pub
~65k rl2-1.4.3.tgz
~1k rl2-1.4.3.lsm
Copying-policy: copy away as long as you don't call Proxim for support
End

**** announcement from author ******

Greg Jones, WD5IVD Austin, Texas
wd5ivd@tapr.org http://www.tapr.org/~wd5ivd

12. Re: [SS:164] Proxim Symphony now supported under Linux

From: "Steve Sampson" <ssampson@usa-site.net>
Date: Sun, 27 Dec 1998 16:56:13 -0600
To: <ss@tapr.org>

Message-ID: <000401be31ec$1a9ea500$01404e2c@dodge.usa-site.net>
Rendered body type: text/plain

Yes, the connector on the ISA cards is very easy to access,
and connect a pig-tail to. Just cut off the antenna from the
coax, put on a BNC, and run it to the roof and outside beam :-)

I like the product, works well in my home, and speed is quite
acceptable.

A Linux port is interesting news! Thanks for the pointer.

Steve

13. Re: Linux and Symphony/RangeLAN

From: "Steve Sampson" <ssampson@usa-site.net>
Date: Sun, 27 Dec 1998 17:04:53 -0600
To: <ss@tapr.org>
Message-ID: <000101be31ed$50a5b5c0$01404e2c@dodge.usa-site.net>
Rendered body type: text/plain

I tried the Linux site for the Proxim driver, and it
looks like it changed:

    ftp://ftp.komacke.com/pub/rl2isa-driver/

73,
Steve

14. Re: Proxim Symphony now supported under Linux

From: Jeff King <jeff@aerodata.net>
Date: Sun, 27 Dec 1998 18:57:33 -0500
To: Spread Spectrum <ss@tapr.org>
Cc: "Greg Jones, WD5IVD" <wd5ivd@tapr.org>
Message-ID: <3686C96D.71A0D82C@aerodata.net>
Rendered body type: text/plain

Here is the rest of it, it got cutoff from the repost you did for me, Greg.
Hopefully it makes it to the list.

-Jeff

**** announcement from author ******

>From Dave:

> Hi All,
>
> I've finally released a new version of the driver - 1.4.3. It now
supports the Symphony PnP ISA card. Here's a
fairly complete list of changes:
>
> - added support for Jean Tourrilhes' <jt@hplb.hpl.hp.com> wireless
extensions to
>   kernel. Read about it at
>   http://www-uk.hpl.hp.com/people/jt/Linux/Linux.Wireless.html
>   and download the tools at
ftp://hyper.stanford.edu/pub/pcmcia/contrib. Support
>   isn't complete yet.
> - realized that the RangeLAN2 MicroISA *is* supported. Silly me.
README updated.
> - provided hooks for several new parameters. README and params.doc
tell you about
>   them.
> - added a note in README on how to support multiple cards in one
machine.
> - studied Alan Cox's sample driver and made some changes. Don't know
that anything
>   is much different. One thing to look at if you've had crashes is if

there was
>   anything associated with LLSReceiveLookAhead. It now checks for
buffer-
>   allocation failures.
> - added more stats reporting - both regular enet stuff and wireless
ext. stuff.
> - added ability to set roaming configuraiton and MAC Optimize, like in

Win95 driver
> - slightly changed rl2cfg - you don't need to specify node type to set

the other
>   parameters
> - fixed a security hole - now checks if you are su before changing
parameters
> - fixed the bug where if you choose the wrong base address, it will
crash the
>   kernel
> - the bug fix above changed some expire values (it was using HZ
wrong). Might also
>   fix other obscure bugs reported that I haven't been able to
recreate.
> - added support for Symphony PnP ISA card.
> - changed default irq to 11. 15 is too commonly used for a second IDE

controller.
>
> Unfortunately, it does not support the PC Card. I believe the library

will support it but when I worked with Mark
Podlipec, we had trouble getting the ISR registered correctly. If you
think you are good with PC Card drivers, take a
look at rl2lls.c and let me know if you think you can do it. There are
two variables that need to be set for the
library and I'd be glad to fill you in on those.
>
> Have fun with it. Remember, Proxim doesn't support it so don't call
them.
>
> Davek

15. TAPR FTP Site

From: "Greg Jones, WD5IVD" <wd5ivd@tapr.org>
Date: Tue, 29 Dec 1998 00:57:57 -0600
To: "HF SIG list   mailing"<hfsig@tapr.org>, " Spread Spectrum "<ss@tapr.org>,
        " TAPR/AMSAT DSP "<dsp@tapr.org>,
        "APRS SIG list   mailing"<aprssig@tapr.org>,
        "NETSIG list   mailing"<netsig@tapr.org>,
        "BBS SIG list   mailing"<bbssig@tapr.org>,
        " tacgps "<tacgps@tapr.org>, aprsnews, mic-e,
        TAPR Regional Freq <regional_freq@tapr.org>
Cc: "Bill Westradio   Pasternak"<billwa6itf@aol.com>,
        "Len KB7LPW   Winkler"<lenwink@indirect.com>,
        "Hap KC9RP RAIN Holly"<hholly@ais.net>,
        "Greg Jones WD5IVD" <wd5ivd@tapr.org>, "Rich   CQ VHF"<CQVHF@aol.com>,
        "Gagne, Jennifer, N1TDY" <jgagne@arrl.org>,
        "Donald   Rotolo"<73227.2644@compuserve.com>,
        "Stan   Horzepa"<stanzepa@nai.net>,
        " Bob Hansen (TAPR) "<psr@tapr.org>,
        "Ham Radio On-line" <vbook@vbook.com>,
        " Tom McDermott "<mcdermot@eagle.aud.alcatel.com>,
        <rlindquist@arrl.org>, "Brad Smith, KC5SP" <brads@galstar.com>
Message-ID: <v04020a20b2ae2874411e@[207.43.172.66]>
Rendered body type: text/plain

Please be aware that the TAPR FTP site (ftp://ftp.tapr.org) has undergone a
major reorganization as part of the upcoming web site restructuring and
redesign.

If you have links on web pages that reference into our ftp site, please
take a moment to check them and update those URLs to reflect the changes at
our site.

The shallower directory structure should make things easier for individuals
visiting our site to find files and information.

Sorry for any inconvenience this might cause.

Cheers - Greg Jones, WD5IVD
TAPR

The new FTP directory structure:

ftp://ftp.tapr.org
Top Level:
        aprssig/

```
        WinMacData/
        aprsnews/
        dosstuff/
                APRSdos/
                DOSmisc/
        garmin/
        history/
        javastuff/
        linux/
        macstuff/
                MacAPRS/
                MacGPS/
                MacMisc/
                PacketTracker/
        mail_archive/
        maps/
                100K_Not_On_CD/
                MacMaps/
                PCMaps/
                WinMacMaps/
        mic-e/
        movies/
        palmstuff/
                palmaprs/
                palmmaps/
                palmmisc/
                palmos/
        presentations/
        shlib/
        upload/
        winstuff/
                APRSPLUS/
                Waypoint/
                WinAPRS/
                WinMisc/

bbssig/
        mail_archive/

das/
        mail_archive/

dcc/

dsp/
        dsp56000/
        dsp56001/
        dsp56002/
        mail_archive/
        psa_sound_card/
        recent_uploads/
        tms320c10/
        tms320c26/
        tms320c50/
        upload/

dsp93/
        Paccomm_eproms/
        diskettes/
        dsp93_eproms/
        mail_archive/
        manuals/
        schems/
        simulators/
        software/
        software.list
        source/
        stlouis.wrkshp.95/
        updates/
        upload/
        util/

general/
        9600baud/
                ALINCO/
                ICOM/
                KENWOOD/
                MOTOROLA/
                YEASU/
```

```
        gps/
                HPAN52-2/
                garmin/
                motorola/

        hfsig/
                mail_archive/

        info/
                kits/
                logos/
                publications/

        netsig/
                mail_archive/

        psr/

        pub/

        regional_freq/
                mail_archive/

        software_lib/
                DEMOS/
                Linux/
                RF/
                UPLOAD/
                an93/
                bbs/
                dsp/
                gps/
                listing
                misc/
                sat/
                switch/
                tcpip/
                terminal/
                thenet.txt
                tnc/
                utils/
                weather/

        ss/
                mail_archive/
                SS_STA/
                dcc97_ss_seminar/

        tac2/
                mail_archive/

        talnet/

        tapr-bb/
                mail_archive/

        tapr-tnc/
                mail_archive/

        utils/

-----
Greg Jones, WD5IVD                  Austin, Texas
wd5ivd@tapr.org      http://www.tapr.org/~wd5ivd
```

16. TAPR FHSS Project Update

```
From: "Greg Jones, WD5IVD" <wd5ivd@tapr.org>
Date: Tue, 29 Dec 1998 15:59:11 -0600
To: " Spread Spectrum "<ss@tapr.org>
Cc: "Bill  Westradio   Pasternak"<billwa6itf@aol.com>,
        "Hap  KC9RP RAIN Holly"<hholly@ais.net>,
        "Rich   CQ VHF"<CQVHF@aol.com>,
        "Donald   Rotolo"<73227.2644@compuserve.com>,
        "Stan   Horzepa"<stanzepa@nai.net>,
        "Ham Radio On-line" <vbook@vbook.com>,
        " Tom McDermott "<mcdermot@eagle.aud.alcatel.com>,
        <rlindquist@arrl.org>, "Brad Smith, KC5SP" <brads@galstar.com>,
        "Sumner, Dave,  K1ZZ" <dsumner@arrl.org>
```

Message-ID: <v04020a0bb2aefbd9af1e@[207.43.172.66]>
Rendered body type: text/plain

The TAPR SS Web page has had a major update today.
http://www.tapr.org/ss

The SS audio page has been updated to include all the new audio we have on
Spread Spectrum issues over the last several months.

I also did a major rewrite of the TAPR FHSS Project Page
(http://www.tapr.org/tapr/html/taprfhss.html)
The information presented on the page should be easier to view and see what
is happening timeline wise.

Now for the Report:

TAPR 900MHz FHSS Radio Design Update
December 20th, 1998

The development group meet for a social/review meeting on November 28th,
1998. The goal of the meeting was to have some food and discuss the project.

As of the meeting, the RF board is transmitting a QPSK modulated signal on a
single frequency of 913MHz. Basic functionality has been demonstrated;
however, there's a lot more to test on the TX side of the design. There has
been really good progress made in a short period of time. This was a major
milestone reached. Work will start to check out the receiver when the
transmitter is a little further along. This testing will be more difficult,
but since a lot of the circuitry is common there is less to check out. A
second unit will have to be completed, including known modifications to the
PCB, for this testing.

The digital board CPU, network interface, and the Qualcomm forward error
correcting (FEC) chip Q1900 is working. We are also able to communicate with
the QPSK decoder registers. Initial testing indicated that a more elaborate
PLD solution would be required to support the high speed phase adjustments
and to support the odd clocking required for FEC. A design is completed and
ready for test and debug. A small PCB will be built to test this before we
make another pass at the digital PCB. The group has discovered that
high-speed phase adjustment is required for the Harris QPSK demodulator.
The PLD
has some 350-500 gates of logic.

The group has been very happy with the performance of the Qualcomm part.
Thanks to Frank Anontio, N6NKF, for his assistance in getting us the samples
we require for the project.

The Software/Firmware is in place to handle the key networking interface and
to continue radio testing. Current plan is to use an HTTP interface to
control and test the radio functions. A PC based tool to interface with the
radio using UDP packets also works. The httpd software on the radio is
working and the radios basic parameters can be accessed via a web page and
reconfigured.

Also, the group has decided to use a Dallas Semiconductor Button part in the
project. The "button" is a two wire interface which provides a registered
MAU ethernet address for the radio.

The function of the hardware and software is so complex that each small
section of the radio must be proven before we can move on to the next issue.

The projects moves forward, but as each small step is taken we can see just
how much more work will be required before we have a fully functioning
high-speed radio available.

Until the next report.

Status update for the FHSS radio project.

1. The SPI driver is written and working. The protocol module for the
interface to the PLD is written, but cannot be tested until the PLD is
ready, and that's a ways down the road.

2. HTTP/1.0 daemon is written and code to send/receive HTML files is
working. This allows using a web-browser to read the configuration from the
kernel and updating some of the parameters. The final parameter save

portion is just stubbed off right now until we settle on how they are stored
and configured in memory. But we can demo the operation from a browser and it
looks nice.

3. Further testing of the Ethernet performance is occurring. We are starting to
write a layer-2 demultiplexer in the TCP/IP stack. The current XINU stack
only performs layer-3 routing and has no layer-2 functionality. This will
then feed some new software that does segmentation of the ethernet frame to
fit into the radio's 10 millisecond transmit periods and then encapsulate
it with the radio link protocol. Layer-2 demultiplexing will probably
require some frame cloning on ethernet packets containing broadcast
addresses (sending the copy to layer-3).

Tucson Amateur Packet Radio, 8987-309 E. Tanque Verde Road, Tucson, AZ
85749-9399. Phone: (940) 383-0000. Fax: (940) 566-2544.
Internet: TAPR@TAPR.ORG

Greg Jones, WD5IVD   Austin, Texas
wd5ivd@tapr.org   http://www.tapr.org/~wd5ivd

17. Re: [SS:168] TAPR FTP Site

From: Stefano Coccon <coccpce@mail.nauta.it>
Date: Tue, 29 Dec 1998 19:13:11 +0100
To: ss@tapr.org
Message-ID: <36891BB6.929B1A6F@mail.nauta.it>
Rendered body type: text/plain

dear Greg,
Thanks for the note; I have already experienced some problem.

I'll wait for the reorganization.

Have my best wishes for an happy new year and please extend my wishes to all the
staff at TAPR.

73 - Stefano - IV3URK -member #5940

Greg Jones, WD5IVD wrote:

> Please be aware that the TAPR FTP site (ftp://ftp.tapr.org) has undergone a
> major reorganization as part of the upcoming web site restructuring and
> redesign.
>
> If you have links on web pages that reference into our ftp site, please
> take a moment to check them and update those URLs to reflect the changes at
> our site.
>
> The shallower directory structure should make things easier for individuals
> visiting our site to find files and information.
>
> Sorry for any inconvenience this might cause.
>
> Cheers - Greg Jones, WD5IVD
> TAPR
>
> ----
>
> The new FTP directory structure:
>
> ftp://ftp.tapr.org
> Top Level:
>   aprssig/
>   WinMacData/
>   aprsnews/
>   dosstuff/
>   APRSdos/
>   DOSmisc/
>   garmin/
>   history/
>   javastuff/
>   linux/
>   macstuff/
>   MacAPRS/
>   MacGPS/
>   MacMisc/
>   PacketTracker/
>   mail_archive/

```
>                 maps/
>                         100K_Not_On_CD/
>                         MacMaps/
>                         PCMaps/
>                         WinMacMaps/
>                 mic-e/
>                 movies/
>                 palmstuff/
>                         palmaprs/
>                         palmmaps/
>                         palmmisc/
>                         palmos/
>                 presentations/
>                 shlib/
>                 upload/
>                 winstuff/
>                         APRSPLUS/
>                         Waypoint/
>                         WinAPRS/
>                         WinMisc/
>
>         bbssig/
>                 mail_archive/
>
>         das/
>                 mail_archive/
>
>         dcc/
>
>         dsp/
>                 dsp56000/
>                 dsp56001/
>                 dsp56002/
>                 mail_archive/
>                 psa_sound_card/
>                 recent_uploads/
>                 tms320c10/
>                 tms320c26/
>                 tms320c50/
>                 upload/
>
>         dsp93/
>                 Paccomm_eproms/
>                 diskettes/
>                 dsp93_eproms/
>                 mail_archive/
>                 manuals/
>                 schems/
>                 simulators/
>                 software/
>                 software.list
>                 source/
>                 stlouis.wrkshp.95/
>                 updates/
>                 upload/
>                 util/
>
>         general/
>                 9600baud/
>                         ALINCO/
>                         ICOM/
>                         KENWOOD/
>                         MOTOROLA/
>                         YEASU/
>
>         gps/
>                 HPAN52-2/
>                 garmin/
>                 motorola/
>
>         hfsig/
>                 mail_archive/
>
>         info/
>                 kits/
>                 logos/
>                 publications/
>
>         netsig/
```

```
>                 mail_archive/
>
>         psr/
>
>         pub/
>
>         regional_freq/
>                 mail_archive/
>
>         software_lib/
>                 DEMOS/
>                 Linux/
>                 RF/
>                 UPLOAD/
>                 an93/
>                 bbs/
>                 dsp/
>                 gps/
>                 listing
>                 misc/
>                 sat/
>                 switch/
>                 tcpip/
>                 terminal/
>                 thenet.txt
>                 tnc/
>                 utils/
>                 weather/
>
>         ss/
>                 mail_archive/
>                 SS_STA/
>                 dcc97_ss_seminar/
>
>         tac2/
>                 mail_archive/
>
>         talnet/
>
>         tapr-bb/
>                 mail_archive/
>
>         tapr-tnc/
>                 mail_archive/
>
>         utils/
>
> -----
> Greg Jones, WD5IVD                 Austin, Texas
> wd5ivd@tapr.org      http://www.tapr.org/~wd5ivd
```

18. New SIG for the Kenwood THD7A/E

```
From: "Horzepa, Stan" <Stan_Horzepa@adc.com>
Date: Wed, 30 Dec 1998 12:57:46 -0600
To: AO16APRS <ao16aprs@tapr.org>, APRS-FL <aprs-fl@tapr.org>,
        APRSNEWS
  <aprsnews@tapr.org>, APRSSIG <aprssig@tapr.org>,
        BBSSIG
  <bbssig@tapr.org>, DSP sig <dsp@tapr.org>,
        HFSIG <hfsig@tapr.org>, HTAPRS <htaprs@tapr.org>,
        MIC-E sig <mic-e@tapr.org>, NETSIG
  <netsig@tapr.org>,
        PROPNET sig <propnet@tapr.org>,
        REGIONAL_FREQ sig
  <regional_freq@tapr.org>, SS sig <ss@tapr.org>,
        TACGPS sig
  <tacgps@tapr.org>, TAPR-BB sig <tapr-bb@tapr.org>,
        TAPR-TNC
  <tapr-tnc@tapr.org>
Message-ID: <1B66FFC6BE1CD211A0620008C7A42AC21EF760@MRDNEXCH01.ct.adc.com>
Rendered body type: text/plain
```

TAPR is pleased to announce the formation of a new special
interest group, the HTAPRS SIG.

The purpose of HTAPRS is to provide a forum for the discussion
of issues related to the Kenwood THD7A/E transceiver. (HTAPRS
is also intended to lessen the number of messages on TAPR's
APRSSIG by moving THD7A/E traffic off that SIG.)

To subscribe to the HTAPRS mail list, send email to
listserv@tapr.org with the following text in the body of the
message:

   subscribe htaprs your_first_name your_last_name

January 1999

Original source file: ss.9901
Source: http://ftp.tapr.org/tapr_history/SIG_Archives/spread-spectrum-sig/mail_archive/ss.9901

1. La conversacion de hoy

From: "Gabriela Bullock" <cobalto@www.cd>
Date: Fri, 1 Jan 1999 16:33:49 -0300
To: -@TheHost.net
Message-ID: <199901011411.JAA14966@TheHost.net>
Rendered body type: text/plain

Julian:

El web de ese chat que hoy hablamos es:

http://WWW.ARGENTINA.COM

Saludos y Muy Feliz A#o Nuevo!
Gaby

2. Zoom Air, was Re: [SS-STA:438] Re: Activity Report

From: Jeff King <jeff@aerodata.net>
Date: Fri, 15 Jan 1999 16:12:00 -0500
To: Steve Stroh N8GNJ <n8gnj@tapr.org>, ss@tapr.org
Message-ID: <369FAF1F.DE538CC0@aerodata.net>
Rendered body type: text/plain

"Steve Stroh N8GNJ " wrote:

>
> One of the best pieces of news is that Zoom Telephonics has announced a
> cheap ISA card that's fully compliant with the 802.11 Wireless LAN
> specification - lowest price I've seen yet.

Just checked it out. Based on the Harris Prism chip set, no word on the MAC
layer,
assume its the AMD chip set or ? I put all call into some marketing guys voice
mail
to see if they will be supporting linux.

Any idea of the street price? I see $299 on the web site. Symphony's is $140
street
with same power out (100mw). I don't believe it is fully 802.11 compatible
though..

-Jeff wb8wka

3. Re: [SS:173] Zoom Air, was Re: [SS-STA:438] Re: Activity Report

From: Mike@Dent.Org
Date: Sat, 16 Jan 1999 19:29:44 +0000
To: ss@tapr.org
Message-ID: <199901161929.TAA29336@mary.g6phf.ampr.org>
Rendered body type: text/plain

> "Steve Stroh N8GNJ " wrote:
>

> Any idea of the street price? I see $299 on the web site. Symphony's is $140
> street
> with same power out (100mw). I don't believe it is fully 802.11 compatible
> though..

Is any body using the symphony/proxim cards in a Linux system across town or
similar? Just wondered how they perform etc?

Thanks
Mike

>
> -Jeff wb8wka
>
>

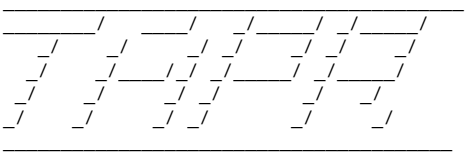
--
"I remember when NOS was NET and all you got was "Welcome to TTY-link.." "
 Mike Dent. G6PHF. Morecambe, Lancs. UK. | Mike@Dent.Org
 AMPRnet=g6phf@gb7mbb.ampr.org | http://www.lancs.ac.uk/staff/dentm/

PGP Fingerprint=44 F5 22 C4 CB A2 3F 9F 73 9C 02 9F 0B 16 55 72

4. TAPR Spread Spectrum SIG Welcome Message

From: Lyris <lyris@lists.tapr.org>
Date: Mon, 25 Jan 1999 01:10:23 -0600
To: lyris.ss@tapr.org
Message-ID: <LYR6751-466-1999.01.25-01.10.23--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

```
**********************************************************************
*                PLEASE SAVE THIS WELCOME MESSAGE!                   *
**********************************************************************
```



Welcome to the TAPR Spread Spectrum SIG!

This mailing list is for the discussion of topics related to the application of spread spectrum communications technology to amateur packet radio networking. The emphasis of this SIG is on the technology of spread spectrum rather than regulatory or political issues. Suitable topics include:

- New SS chipsets and modem products, and their applicability to the amateur service

- Performance reports on existing products (e.g., Part 15 WLAN devices)

- Relative merits of direct sequence, frequency hopping and hybrid approaches in amateur SS applications

- Use of CDMA and other multiple access techniques to build packet radio LANs/MANs

- Dealing with shared allocations and interference in the UHF and higher amateur bands

- Proposals for development projects in amateur packet SS

- Sources of SS information on the Internet and elsewhere: books, articles, web pages, FAQ files, etc

The TAPR SS SIG is unmoderated. We would like to keep it that way, to encourage the open exchange of ideas and minimize the turnaround time. This will only be possible if the participants exercise some restraint. Discussions of technical issues can get heated at times, but they are not useful unless they also shed some light on the topic. Personal attacks will not be tolerated, and may result in the offender(s) being summarily removed from the list.

Maintainer of the SIG is Barry McLarnon, VE3JF. Please direct comments and suggestions to bm@hydra.carleton.ca or ve3jf@tapr.org.

To post messages to the ss list, send email to:

        ss@lists.tapr.org

To unsubscribe from this mailing list, surf to:

   http://www.tapr.org/cgi-bin/lyris.pl?enter=ss

or send email to:

   lyris@lists.tapr.org

with the following line in the body of the message:

   unsub ss

The host of this list is:

   Tucson Amateur Packet Radio (TAPR)
   tapr@tapr.org
   http://www.tapr.org
   8987-309 E Tanque Verde Rd. #337, Tucson, AZ 85749-9399,
   phone 940-383-0000, fax 940-566-2544

Just so that you have all the commands neatly contained in one place,
here is just about everything you will need to know. Note that this list
is running on a Lyris server. Please be aware that the commands might be
different from those that you are used to using on other list servers.
(For more information on Lyris, see <http://www.lyris.com/>.)

1. First of all, almost everything that you might need to do on the
   server is most easily and effectively performed via Lyris's Web
   interface at <http://www.tapr.org/cgi-bin/lyris.pl>.

2. In case you do not have Web access, here are some key commands; in all
   cases, the default server address is: <lyris@lists.tapr.org>. Other
   addresses are shown where appropriate. Note that commands may be placed
   in either the subject line or in the body of the message:

```
               SUBSCRIBING:
                 subscribe ss your_name
                 join ss your_name
                 alternate address: join-ss@lists.tapr.org

               UNSUBSCRIBING:
                 unsubscribe ss
                 leave ss
                 alternate address: leave-ss@lists.tapr.org

               SETTING MEMBERSHIP TO DIGEST MODE:
                 set ss digest

               SETTING MEMBERSHIP TO INDEX MODE:
                 set ss index

               SETTING MEMBERSHIP TO DISCUSSION MODE:
                 set ss mail

               TEMPORARILY SUSPENDING MAIL FROM THE LIST:
                 set ss nomail

               RESUMING MAIL FROM THE LIST:
          (command depends on your preferred mode)
                 set ss mail
                 set ss digest
                 set ss index

               ACKNOWLEDGMENT:
                 set ss ack
                   (sends you a confirmation message when your posts are sent)
                 set ss noack
                   (no confirmation message when posts are distributed)

               RECEIVING COPIES OF YOUR OWN POSTS:
                 set ss repro
                   (receive copies of your own posts)
                 set ss norepro
                   (do not receive copies of your own posts)

               SETTING YOUR PASSWORD:
                 set ss pw=mypassword
                   (where "mypassword" is the password you wish to set)

               DETERMINING YOUR MEMBERSHIP SETTINGS:
                 query ss

               RETRIEVING THE CURRENT VERSION OF THIS DOCUMENT:
```

```
                  get ss hello

                MORE INFORMATION ON LYRIS'S COMMANDS:
                  help

                POSTING TO THE LIST:
                  You must be a subscriber to post messages. Sending
                  mail to this address will distribute it to all the members of the
                  mailing list:  ss@lists.tapr.org


   3. CHANGING YOUR SETTINGS/ADDRESS VIA THE WEB INTERFACE: To do this, go
      to <http://www.tapr.org/cgi-bin/lyris.pl> and click the link in the
      "Change Your Settings" section. You'll need to enter your e-mail
      address and password (if you chose one) to continue.

      (If you've forgotten your password, you can type in your e-mail address
       in the field at the bottom of the page and click "Get password" to
       request Lyris to e-mail your password to you.)


      At the following page, you can read messages, post a message, adjust
      your settings, or unsubscribe. From the settings page, you can change
      your status (MAIL, DIGEST, INDEX, or NOMAIL), choose whether or not to
      see your own messages, and choose whether or not you want to receive a
      separate acknowledgement via e-mail when one of your messages is posted
      to the list, You can also change your e-mail address if you need to.
      When you change your settings, make sure you click the "Save" button at
      the bottom of the page.


   4. ARCHIVES: The ss SIG archives are available on the Web, at the
      following URL: <http://www.tapr.org/sigf.html>


   5. BOUNCED MAIL: One of the key features of Lyris is its ability to handle
      mail bounces transparently to the list owner; as such, bounced mail
      will be handled primarily by the Lyris list server.


   6. POSTS/REPLIES FROM DIGEST USERS: You *must* change the Subject: line
      when replying to a digest; all posts with "ss DIGEST" in the
      Subject: line will be rejected by the server (you will receive a
      "rejection letter" when this happens).
```

5. [ss] TAPR Server Upgrade

From: "Greg Jones, WD5IVD" <wd5ivd@tapr.org>
Date: Mon, 25 Jan 1999 05:05:39 -0600
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-528-1999.01.25-05.06.11--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

```
Hello TAPR Archiver, you might be interested to know that TAPR
has upgraded our list processor to a new lyris based system.

This message is going to you on the ss list.

You are listed as: lyris.ss@tapr.org on the list


This new package has a lot of features which might cause a few glitches as
we make the transition.  Read the following to find out more.



ACCESSING THE SYSTEM VIA THE WEB
--------------------------------
When the new TAPR web pages go on-line in the next few weeks, they will
contain the new interface to the lists as well as a new and improved search
engine for the various mail archives.

To directly access the TAPR.ORG Lyris server for now, use
http://www.tapr.org/cgi-bin/lyris.pl



GETTING ON-LINE HELP
--------------------
```

visit: http://www.tapr.org/lyris/help/index.html for a full on-line manual

MEMBERS ONLY POST

With the recent increase in spamming some of the TAPR lists implement the
rule "only members of the list can post to said list". If the incoming
e-mail address doesn't match your e-mail subscription stored in the list,
lists.tapr.org will reject your message.

If you get a rejected message from the list server, then you will need to
change your address in the list. We have already seen a few rejected posts
in the log. We apologize for those caught in the change over. Do the
following and repost your message.

To change your member e-mail address on this list, do the following:

1. go to http://www.tapr.org/cgi-bin/lyris.pl?enter=ss
2. For "Did you forget your password?" enter lyris.ss@tapr.org
3. lists.tapr.org will e-mail you your password for the list.

After you get your password use "If you are member..."
4. enter lyris.ss@tapr.org for email address
5. enter YOUR_PASSWORD (the one you just got e-mailed)
6. click on the enter button

At this point you can edit any of your information for this list.
You can also send and receive messages from this screen if you are away
from e-mail at the time. We plan on keeping e-mail for 30 days on the
Lyris interface, after which time messages can be found in the html
searchable archives.

To get more information on your options see:
http://www.tapr.org/lyris/help/ChangeMembershipSettings.html

LOTS OF INFORMATION IN EACH MESSAGE

No member of a list should now have an excuse for not knowing how to
unsubscribe from the list. Each message contains information on how to
subscribe as well as unsubscribe. To unsubscribe, just send to the unique
address shown in your message.

HOLD ON BOUNCED E-MAIL

When people's email addresses go bad (for instance, they change to another
Internet Service Provider) each email message sent to their old address
bounces back to lists.tapr.org. In the past, this was a huge management
issue for myself and a few other on the tapr list server. Lyris will now
analyze the bounces and determine who is causing them. If a member's email
address appears to be invalid for 5 days in a row, Lyris automatically
disables that participant's membership on the system, so that
lists.tapr.org no longer sends them mail.

When a user is placed on hold, we will send the user an email message
indicating that this has occurred, as well as a copy of the most recent
error message received. This notification message, if the user receives it,
can be very helpful to the user in determining why their email was being
rejected by their mail system.

In such a case, send the "unhold" command to the List Server address, and
Lyris will return any "held" subscriptions back to "normal." The format of
the unhold command is:

     email to: lyris@lists.tapr.org
     subject: unhold

500K Message Limit on most open lists

We have implemented a 500K message size limit on the open lists. This
should catch most of the huge posts that get made. If this limit needs to
be changed, the list manager can change the setting for that list.

MESSAGE FILTER

Lyris looks for a lot of things in the message that might indicate
something not meant to be sent to the list. Like the word TEST or
UNSUBSCRIBE in the Subject line. If you send a message to the list server
that it thinks is a 'suspect' message and it isn't, just change the word or
line and please resubmit.

While this might cause a problem now and then for the average user, it
saves a lot of posting of messages that shouldn't be making it to the list.

CONCLUSION

Moving to a new list package has been on our upgrade to do list for some
time. Thanks to member support, TAPR has been able to make this upgrade a
reality. We feel that this new package will greatly help expand our
capabilities while also reducing the amount of work that it took to keep
the previous list package running correctly.

I am in the midst of developing a new web site along with several other new
items that should make using and getting information from the TAPR.ORG site
much easier.

If you have any questions or comments, please feel free to drop me an
e-mail message.

To those members of TAPR on this list, please give yourself a big pat on
the back of supporting TAPR! For those of you that haven't joined TAPR
yet, consider this a friendly reminder that you should think about joining
in order to support future maintenance of things we do on the Internet and
the various technical projects that are always ongoing. TAPR is only as
strong as its membership.

Cheers -- Greg Jones, WD5IVD
President, TAPR

Greg Jones, WD5IVD   Austin, Texas
wd5ivd@tapr.org   http://www.tapr.org/~wd5ivd

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

6. [ss] Proposed Wireless Internet of Portable hosts

From: Jon Roland <jon.roland@constitution.org>
Date: Mon, 25 Jan 1999 10:11:56 -0800
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-698-1999.01.25-12.20.50--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/html

A Proposal for a Wireless Internet of Portable hosts (WIPNet)
by Jon Roland KC5MYS jon.roland@constitution.org

The prospects that the Y2K problem, or other such cascade failure arising
from other causes, might bring down power grids and telecommunications
systems, suggests that we consider establishing an alternative
communications system that could support emergency services in such an
event.

One of the main ways that emergency communications has been provided in the
past is through amateur radio networks. However, the advent of packet radio
and other forms of digital communications on amateur bands suggests a better
use of the bandwidth, especially since a nationwide or worldwide failure of
essential systems would be likely to overwhelm the ability of traditional
amateur voice communications to cope with the situation.

A number of amateur and commercial researchers have been exploring expansion
of the Internet to radio links, using the TCP/IP and AX-25 protocols and
making use of both the amateur bands and the newly available spread spectrum
bands. These are represented by such efforts as FlexNet and AMPRnet, and
such services as Ricochet. See http://www.constitution.org/amprnet/amprnet.htm

This is to suggest that we get together to establish a much more ambitious
system. The effort is complicated by the need to confine the use of amateur

bands to licensed amateurs, which is not a limitation for the use of spread spectrum bands. The following are the design specifications for such a system.

- All nodes would be portable computers and transceivers. There would be no wired backbone, although there could be connections to the wired backbone to make use of it, if it is available, such as to span what would otherwise be breaks in the network.

- The geographic range of the system would be nationwide or worldwide. Any node would be able to send an email message to any other anywhere on the network, regardless of the number of hops in between. There would also be support for newsgroup, ftp and WWW services, but these might be restricted in the event of an emergency.

- The primary bands would be spread spectrum, with perhaps some use of HF bands for longer distances, to span breaks in the network.

- The addressing and routing scheme would permit all nodes to move about freely, and perhaps rapidly, without every node having to have a complete database of every node and its location, although such a database might be available on some nodes, making them DNS servers.

- There would be a priortization protocol to permit high priority messages to have routing priority over lower ones.

There are many advantages to the use of spread spectrum. It supports higher bandwidths, makes more efficient use of a given band, and provides better security. At the moment its use is limited to the 900 MHz and 2.4 GHz bands, and to 1 W, but amplifiers are available for use outside the U.S., and we can expect that use at higher powers would be excusable in the event of a national emergency, as would the use by non-licensed personnel. A protocol would have to be adopted for exchanging sequence codes among cooperating transceivers, but PGP-encrypted messages on a standard contact sequence could be used for that and for authentication of the nodes. It would also be better suited for preventing packets from going astray.

It would be possible, in principle, for nodes within range of each other to update one another's link databases, and for those databases to be transmitted to other nodes to update their, on a continuing basis, so that every node would maintain an updated database of every node and which was in range of which other, however, this would involve too heavy an overhead. A different approach would be for each node to transmit its approximate grid location, either set manually or taken from GPS, and messages routed along a node path that would take them in the general direction of the target node until a link was established.

The line-of-sight range of both VHF FM and SS is about 20 miles, under good conditions, and using antennas that could be carried by a person. That means that to establish a nationwide network, and to provide sufficient bandwidth for heavy message traffic, there would need to be a fairly dense positioning of nodes not more than 20 miles apart, and preferably closer, across the country. This could be a problem in some of the Western states, especially desert country, where population density is low, but in an emergency node-bearing operators could scatter themselves and position themselves to make sure that coverage was complete. Three or four operators in each of the 3000 counties in the United States might be sufficient.

Small notebook or wearable computers with large disk drives are now becoming available, and they should soon become fairly inexpensive. SS 1 W transceivers are also becoming available at a cost of about $200 each. The only other things that would be needed would be power packs, a good antenna, and perhaps extra disk drive capacity, all of which could be carried by an operator in a backpack.

The importance of portability must be emphasized. In an emergency, the availability of fuel to operate a vehicle cannot be assumed, although vehicle based mobile systems might be made use of if available. But operators should plan on being able to operate on foot, perhaps using solar cells to recharge their batteries. The operator will also have to carry water, food, medical, and other survival supplies on him, so the communications equipment needs to be as small, light, and easy to use while on the move as possible.

The military has such systems, but, typically, they are too expensive for civilian use. Indeed, they are too expensive for widespread use by the military, which is why we cannot depend on military or national guard personnel to provide such services in an emergency. This needs to be a civilian, autonomous system that is not under central authority or control,

like the Internet itself, and that therefore cannot easily be interdicted or
interfered with by anyone.

We need to vigorously pursue the development, testing, and deployment of
such a system, with the goal of full deployment not later than October,
1999. Comments for ways to do this are welcome.

===
Constitution Society, 1731 Howe Av #370, Sacramento, CA 95825
916/568-1022, 916/450-7941VM Date: 01/25/99 Time: 10:11:56
http://www.constitution.org/ mailto:jon.roland@constitution.org
===

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

7. [ss] Re: Proposed Wireless Internet of Portable hosts

From: "Bret Berger" <bret@infowest.com>
Date: Mon, 25 Jan 1999 11:26:20 -0700
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-701-1999.01.25-12.26.28--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I'd like a few of those $200 SS units. Where do I order them from?

-bret

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

8. [ss] Re: Proposed Wireless Internet of Portable hosts

From: Jon Roland <jon.roland@constitution.org>
Date: Mon, 25 Jan 1999 10:31:33 -0800
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-707-1999.01.25-12.54.41--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

  From: Bret Berger <bret@infowest.com>

> I'd like a few of those $200 SS units. Where do I order them from?

Go to our WIPnet page at http://www.constitution.org/wipnet/wipnet.htm and
follow the links.

---------------End of Original Message-----------------

===
Constitution Society, 1731 Howe Av #370, Sacramento, CA 95825
916/568-1022, 916/450-7941VM   Date: 01/25/99 Time: 10:31:33
http://www.constitution.org/   mailto:jon.roland@constitution.org
===

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

9. [ss] Re: Proposed Wireless Internet of Portable hosts

From: "Bret Berger" <bret@infowest.com>
Date: Mon, 25 Jan 1999 12:37:35 -0700
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-719-1999.01.25-13.37.43--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Thanks for the quick reply Jon. I surfed on over the the page below, but
could find no mention of $200 SS radios. Did I miss something?

-bret

-----Original Message-----
From: Jon Roland <jon.roland@constitution.org>
To: TAPR Spread Spectrum Special Interest Group <ss@lists.tapr.org>
Date: Monday, January 25, 1999 11:55 AM
Subject: [ss] Re: Proposed Wireless Internet of Portable hosts

>
>
>------------------------
> From: Bret Berger <bret@infowest.com>
>
>> I'd like a few of those $200 SS units. Where do I order them from?
>
>Go to our WIPnet page at http://www.constitution.org/wipnet/wipnet.htm and
>follow the links.

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

10. [ss] Re: Proposed Wireless Internet of Portable hosts

From: Brett Glass <brett@lariat.org>
Date: Mon, 25 Jan 1999 12:50:38 -0700
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-723-1999.01.25-13.52.00--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

The Harris PCMCIA units run about $200 in OEM quantities. Lucent is
a bit higher. No one, to my knowledge, can afford to sell much
under that.

--Brett

At 12:37 PM 1/25/99 -0700, Bret Berger wrote:

>Thanks for the quick reply Jon. I surfed on over the the page below, but
>could find no mention of $200 SS radios. Did I miss something?
>
>-bret
>
>-----Original Message-----
>From: Jon Roland <jon.roland@constitution.org>
>To: TAPR Spread Spectrum Special Interest Group <ss@lists.tapr.org>
>Date: Monday, January 25, 1999 11:55 AM
>Subject: [ss] Re: Proposed Wireless Internet of Portable hosts
>
>
>>
>>
>>------------------------
>> From: Bret Berger <bret@infowest.com>
>>
>>> I'd like a few of those $200 SS units. Where do I order them from?
>>
>>Go to our WIPnet page at http://www.constitution.org/wipnet/wipnet.htm and
>>follow the links.
>
>
>
>---
>You are currently subscribed to ss as: BRETT@LARIAT.ORG
>To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org
>

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

11. [ss] Re: Proposed Wireless Internet of Portable hosts

From: Jon Roland <jon.roland@constitution.org>
Date: Mon, 25 Jan 1999 12:08:02 -0800
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-732-1999.01.25-14.10.00--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

  From: Bret Berger <bret@infowest.com>

> Thanks for the quick reply Jon. I surfed on over the the page below, but
> could find no mention of $200 SS radios. Did I miss something?

Keep clickin'. You have to follow the links to the Communications and
Surveillance page, where you will find some vendors, and on the vendor pages
you may find prices. I would never put prices on my own pages.

--Jon

---------------End of Original Message-----------------

==
Constitution Society, 1731 Howe Av #370, Sacramento, CA 95825
916/568-1022, 916/450-7941VM   Date: 01/25/99 Time: 12:08:02
http://www.constitution.org/   mailto:jon.roland@constitution.org
==

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

12. [ss] Re: Proposed Wireless Internet of Portable hosts

From: "Bret Berger" <bret@infowest.com>
Date: Mon, 25 Jan 1999 13:49:06 -0700
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-740-1999.01.25-14.49.26--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

My clicking finger is about wore off. I was hoping you would just tell me
from which vendors I could purchase the $200 SS radios you mentioned in your
original post.

disappointed in Utah,
-bret

-----Original Message-----
From: Jon Roland <jon.roland@constitution.org>
To: TAPR Spread Spectrum Special Interest Group <ss@lists.tapr.org>
Date: Monday, January 25, 1999 1:10 PM
Subject: [ss] Re: Proposed Wireless Internet of Portable hosts

>
>
>------------------------
> From: Bret Berger <bret@infowest.com>
>
>> Thanks for the quick reply Jon. I surfed on over the the page below, but
>> could find no mention of $200 SS radios. Did I miss something?
>
>Keep clickin'. You have to follow the links to the Communications and
>Surveillance page, where you will find some vendors, and on the vendor
pages
>you may find prices. I would never put prices on my own pages.

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

13. [ss] Re: Proposed Wireless Internet of Portable hosts

From: Bob Lorenzini <hwm@netcom.com>
Date: Mon, 25 Jan 1999 11:50:36 -0700 (MST)
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-747-1999.01.25-15.11.35--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Ok where do I find the 1w xcvrs for $200 as described in the article?

Bob

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

14. [ss] Re: Proposed Wireless Internet of Portable hosts

From: Jon Roland <jon.roland@constitution.org>
Date: Mon, 25 Jan 1999 13:20:02 -0800
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-749-1999.01.25-15.20.53--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

```
------------------------
  From: Bob Lorenzini <hwm@netcom.com>

> Ok where do I find the 1w xcvrs for $200 as described in the article?

Vendors are on http://www.constitution.org/commsurv.htm Visit their sites.

---------------End of Original Message-----------------

=====================================================================
Constitution Society, 1731 Howe Av #370, Sacramento, CA 95825
916/568-1022, 916/450-7941VM         Date: 01/25/99  Time: 13:20:02
http://www.constitution.org/     mailto:jon.roland@constitution.org
=====================================================================


---
You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org
```

15. [ss] Re: Proposed Wireless Internet of Portable hosts

From: "Scott D. Davilla" <davilla@4pi.com>
Date: Mon, 25 Jan 1999 16:48:02 -0500
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-753-1999.01.25-15.48.15--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

```
>------------------------
>  From: Bob Lorenzini <hwm@netcom.com>
>
>> Ok where do I find the 1w xcvrs for $200 as described in the article?
>
>Vendors are on http://www.constitution.org/commsurv.htm Visit their sites.
>

        This sucks, a proposal that references $200 units then when someone
asks were they can buy them, they are told, follow this URL and go check
out the various different vendor that might or might not publish prices.
You got a reference or not. If not then the $200 price point is vapor.
        If you don't know the URL or can give a reference then posting a
general reference to where one might yet the info is a waste of time for
all involved.

Scott

---
You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org
```

16. [ss] Re: Proposed Wireless Internet of Portable hosts

From: Jon Roland <jon.roland@constitution.org>
Date: Mon, 25 Jan 1999 14:57:21 -0800
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-790-1999.01.25-17.37.25--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

```
------------------------
  From: "Scott D. Davilla" <davilla@4pi.com>

>       If you don't know the URL or can give a reference then posting a
> general reference to where one might yet the info is a waste of time for
> all involved.

If you want someone else to do all the research for you and guarantee a
vendor's price, that is not what we are about. We are a nonprofit organization
with an obligation not to show favoritism to for-profit vendors, each of which
is continually updating its product offerings and prices. What we offer is a
collection of links that may help you in your search.

---------------End of Original Message-----------------

=====================================================================
Constitution Society, 1731 Howe Av #370, Sacramento, CA 95825
```

916/568-1022, 916/450-7941VM Date: 01/25/99 Time: 14:57:21
http://www.constitution.org/ mailto:jon.roland@constitution.org
==========

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

17. [ss] Re: Proposed Wireless Internet of Portable hosts

From: John Hansen <hansen@fredonia.edu>
Date: Mon, 25 Jan 1999 18:20:41 -0500
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-798-1999.01.25-18.07.09--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

At 01:20 PM 1/25/99 -0800, you wrote:
>
>
>------------------------
> From: Bob Lorenzini <hwm@netcom.com>
>
>> Ok where do I find the 1w xcvrs for $200 as described in the article?
>
>Vendors are on http://www.constitution.org/commsurv.htm Visit their sites.
>
The only thing I see there that's even vaguely close is the Freewave stuff.
Has that fallen to $200? Seems unlikely to me, but if so, it would be real
interesting.

John W2FS

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

18. [ss] Re: Proposed Wireless Internet of Portable hosts

From: "Scott D. Davilla" <davilla@4pi.com>
Date: Mon, 25 Jan 1999 19:15:13 -0500
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-805-1999.01.25-18.15.49--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

>>   If you don't know the URL or can give a reference then posting a
>> general reference to where one might yet the info is a waste of time for
>> all involved.
>
>If you want someone else to do all the research for you and guarantee a
>vendor's price, that is not what we are about. We are a nonprofit
>organization
>with an obligation not to show favoritism to for-profit vendors, each of
>which
>is continually updating its product offerings and prices. What we offer is a
>collection of links that may help you in your search.

        Ahh, I understand now. You propose a WIPNet in case of Y2k crashing
the power grids and telecommunications systems. One reason is that SS 1 W
transceivers are inexpensive ($200) now right.
        Well there's inexpensive and there's inexpensive. $200 at quantity
10k is inexpensive if you want 10k units. At the quantity one price it's
more like $500 to $700. Most vendors I have checked do offer down to $200
but the quantity is way up there.
        Now if most people that read this list are like me, I'm looking for
an inexpensive quantity one price. Your post suggests that the time is now,
so I ask where. You tell me find it myself, but you will tell you where to
look. Fine, been there, done that, did not find anything I did not know
about already.

        Thanks for your help. The links were interesting to see at least.

Scott

Scott D. Davilla Phone: 919 489-1757 (tel)
4pi Analysis, Inc. Fax: 919 489-1487 (fax)
3500 Westgate Drive, Suite 403 email: davilla@4pi.com
Durham, North Carolina 27707-2534 web: http://www.4pi.com

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

19. [ss] Re: Proposed Wireless Internet of Portable hosts

From: "Jason Wagner" <jason@onyx.uasv.arizona.edu>
Date: Mon, 25 Jan 1999 17:45:14 -0700
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-820-1999.01.25-18.37.30--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

> Well there's inexpensive and there's inexpensive. $200 at quantity
> 10k is inexpensive if you want 10k units. At the quantity one price it's
> more like $500 to $700. Most vendors I have checked do offer down to $200
> but the quantity is way up there.

I am interested in an SS transceiver for $200. Perhaps others on this list are, too? Maybe we could get 10-15 people together to hit that bulk OEM quantity price....

Any thoughts?

Jason

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

20. [ss] Re: Proposed Wireless Internet of Portable hosts

From: Jon Roland <jon.roland@constitution.org>
Date: Mon, 25 Jan 1999 16:50:25 -0800
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-826-1999.01.25-18.56.47--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

From: "Scott D. Davilla" <davilla@4pi.com>

> You propose a WIPNet in case of Y2k crashing
> the power grids and telecommunications systems.

That is one reason that is likely to draw interest to the proposal, but there are other reasons as well.

> One reason is that SS 1 W
> transceivers are inexpensive ($200) now right.

The components are beginning to arrive. We need to figure out how to put them together and make them work in the way I propose.

> Well there's inexpensive and there's inexpensive. $200 at quantity
> 10k is inexpensive if you want 10k units. At the quantity one price it's
> more like $500 to $700. Most vendors I have checked do offer down to $200
> but the quantity is way up there.

But it is an indicator of their costs, and we can get a lower price if we either get together to buy in quantity or win the support of the vendors to provide their products at their cost for civic purposes. Y2K management is a powerful civic purpose.

> Fine, been there, done that, did not find anything I did not know
> about already.

It's not just about reading price lists. It is also about contacting vendors, explaining what we want to do, and negotiating. For defectives we can fix. For discontinued models. For used stuff. For prototypes. For anything we can get.

> Thanks for your help. The links were interesting to see at least.

You are welcome. Let me know if you find something I can add to the page.

--Jon

---------------End of Original Message-----------------

==========
Constitution Society, 1731 Howe Av #370, Sacramento, CA 95825

916/568-1022, 916/450-7941VM Date: 01/25/99 Time: 16:50:25
http://www.constitution.org/ mailto:jon.roland@constitution.org
==========

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

21. [ss] Re: Proposed Wireless Internet of Portable hosts

From: dwayne <ddraig@pobox.com>
Date: Tue, 26 Jan 1999 15:04:31 +1100
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-863-1999.01.25-22.03.15--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Jason Wagner wrote:

> > Well there's inexpensive and there's inexpensive. $200 at quantity
> > 10k is inexpensive if you want 10k units. At the quantity one price it's
> > more like $500 to $700. Most vendors I have checked do offer down to $200
> > but the quantity is way up there.
>
> I am interested in an SS transceiver for $200. Perhaps others on this list
> are, too? Maybe we could get 10-15 people together to hit that bulk OEM
> quantity price....
>
> Any thoughts?

Well, I could contribute 5-20 orders, depending on how useful the stuff
actually is....

What sort of numbers are needed?

Dwayne
--
mailto:ddraig@pobox.com http://i.am/dwayne

....return....to....the....source....

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

22. [ss] Re: Proposed Wireless Internet of Portable hosts

From: Jake Janovetz <janovetz@tempest.ece.uiuc.edu>
Date: Mon, 25 Jan 1999 22:05:09 -0600
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-869-1999.01.25-22.12.22--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I'm interested, too. If someone is going to plan something, please
post the specs of the device on this list.

    Cheers,
    Jake

On Tue, Jan 26, 1999 at 03:04:31PM +1100, dwayne wrote:
> Jason Wagner wrote:
>
> > > Well there's inexpensive and there's inexpensive. $200 at quantity
> > > 10k is inexpensive if you want 10k units. At the quantity one price it's
> > > more like $500 to $700. Most vendors I have checked do offer down to $200
> > > but the quantity is way up there.
> > >
> > > I am interested in an SS transceiver for $200. Perhaps others on this list
> > > are, too? Maybe we could get 10-15 people together to hit that bulk OEM
> > > quantity price....
> > >
> > > Any thoughts?
> >
> > Well, I could contribute 5-20 orders, depending on how useful the stuff
> > actually is....
> >
> > What sort of numbers are needed?
> >

> Dwayne
> --
> mailto:ddraig@pobox.com   http://i.am/dwayne
>
> ....return....to....the....source....
>
>
>
> ---
> You are currently subscribed to ss as: JANOVETZ@UIUC.EDU
> To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

--
   janovetz@uiuc.edu | Once you have flown, you will walk the earth with
 University of Illinois | your eyes turned skyward, for there you have been,
                        | there you long to return.   -- da Vinci
        PP-ASEL | http://www.ews.uiuc.edu/~janovetz/index.html

---
You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

23. [ss] Re: Proposed Wireless Internet of Portable hosts

From: Clint Miller <cmiller@infospeedway.net>
Date: Mon, 25 Jan 1999 22:45:15 -0600
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-875-1999.01.25-22.37.40--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Count me in. I could also contribute several orders.
--
Clint Miller - KD5BYY   http://www.infospeedway.net/
Infospeedway.Net
mailto:cmiller@infospeedway.net
624 W. University #134   voice:940.484.1165/fax:0586
Denton, TX 76201

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

24. [ss] Re: Proposed Wireless Internet of Portable hosts

From: "Ricardo A. Ghigliazza" <rag@airnetworks.com.ar>
Date: Tue, 26 Jan 1999 10:57:58 -0300
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-1200-1999.01.26-07.57.18--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Count me too, anyone have the specs of the products?

Ricardo Ghigliazza

-----Mensaje original-----
De: Jake Janovetz <janovetz@tempest.ece.uiuc.edu>
Para: TAPR Spread Spectrum Special Interest Group <ss@lists.tapr.org>
Fecha: martes 26 de enero de 1999 1:00
Asunto: [ss] Re: Proposed Wireless Internet of Portable hosts

>I'm interested, too. If someone is going to plan something, please
>post the specs of the device on this list.
>
>   Cheers,
>   Jake
>
>
>On Tue, Jan 26, 1999 at 03:04:31PM +1100, dwayne wrote:
>> Jason Wagner wrote:
>>
>> > >   Well there's inexpensive and there's inexpensive. $200 at
quantity
>> > > 10k is inexpensive if you want 10k units. At the quantity one price
it's
>> > > more like $500 to $700. Most vendors I have checked do offer down to
$200
>> > > but the quantity is way up there.
>> >
>> > I am interested in an SS transceiver for $200. Perhaps others on this
list

>> > are, too? Maybe we could get 10-15 people together to hit that bulk
OEM
>> > quantity price....
>> >
>> > Any thoughts?
>>
>> Well, I could contribute 5-20 orders, depending on how useful the stuff
>> actually is....
>>
>> What sort of numbers are needed?
>>
>> Dwayne
>> --
>> mailto:ddraig@pobox.com   http://i.am/dwayne
>>
>> ....return....to....the....source....
>>
>>
>>
>> ---
>> You are currently subscribed to ss as: JANOVETZ@UIUC.EDU
>> To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org
>
>--
>   janovetz@uiuc.edu | Once you have flown, you will walk the earth with
> University of Illinois | your eyes turned skyward, for there you have
been,
> | there you long to return.   -- da Vinci
>   PP-ASEL | http://www.ews.uiuc.edu/~janovetz/index.html
>
>---
>You are currently subscribed to ss as: RICK@RADIOMODEM.COM
>To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org
>
>
>

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

25. [ss] Re: Proposed Wireless Internet of Portable hosts

From: Jon Roland <jon.roland@constitution.org>
Date: Wed, 27 Jan 1999 14:14:16 -0800
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-1671-1999.01.27-16.32.26--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I found a database of wireless products, including spread spectrum modems,
that some of you might not be aware of. It is the Wireless LAN/MAN Modem
Product Directory http://hydra.carleton.ca/info/wlan.html

Might find some good deals there. We added a link to it on our Communications
and Surveillance page, where we are adding others links suggested by some of
you, as well as to the WIPnet page.

But now how about some discussion about my proposal and not just a feeding
frenzy for $200 SS modems? :)

--Jon

==
Constitution Society, 1731 Howe Av #370, Sacramento, CA 95825
916/568-1022, 916/450-7941VM   Date: 01/27/99 Time: 14:14:16
http://www.constitution.org/   mailto:jon.roland@constitution.org
==

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

26. [ss] Re: Proposed Wireless Internet of Portable hosts

From: "Greg Jones, WD5IVD" <wd5ivd@tapr.org>
Date: Wed, 27 Jan 1999 17:02:01 -0600
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-1678-1999.01.27-17.02.33--lyris.ss#tapr.org@lists.tapr.org>

Rendered body type: text/plain

Does everyone on the list here realize the the mainter of this site is your
List moderator ?

maybe not.

Greg

>I found a database of wireless products, including spread spectrum modems,
>that some of you might not be aware of. It is the Wireless LAN/MAN Modem
>Product Directory http://hydra.carleton.ca/info/wlan.html
>
>Might find some good deals there. We added a link to it on our Communications
>and Surveillance page, where we are adding others links suggested by some of
>you, as well as to the WIPnet page.
>
>But now how about some discussion about my proposal and not just a feeding
>frenzy for $200 SS modems? :)
>
>--Jon
>
>===
>Constitution Society, 1731 Howe Av #370, Sacramento, CA 95825
>916/568-1022, 916/450-7941VM   Date: 01/27/99 Time: 14:14:16
>http://www.constitution.org/   mailto:jon.roland@constitution.org
>===
>
>
>---
>You are currently subscribed to ss as: WD5IVD@TAPR.ORG
>To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

-----
Greg Jones, WD5IVD   Austin, Texas
wd5ivd@tapr.org   http://www.tapr.org/~wd5ivd

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

27. [ss] Re: Proposed Wireless Internet of Portable hosts

From: "Bret Berger" <bret@infowest.com>
Date: Wed, 27 Jan 1999 16:14:03 -0700
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-1679-1999.01.27-17.14.18--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

>But now how about some discussion about my proposal and not just a feeding
>frenzy for $200 SS modems? :)

No discussion on your proposal will be allowed until you cough up a vendor
and source for the $200 SS devices.

;->

-bret

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To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

28. [ss] Re: Proposed Wireless Internet of Portable hosts

From: John Hansen <hansen@fredonia.edu>
Date: Wed, 27 Jan 1999 18:22:20 -0500
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-1682-1999.01.27-17.22.56--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

At 02:14 PM 1/27/99 -0800, you wrote:
>I found a database of wireless products, including spread spectrum modems,
>that some of you might not be aware of. It is the Wireless LAN/MAN Modem
>Product Directory http://hydra.carleton.ca/info/wlan.html
>
>Might find some good deals there. We added a link to it on our Communications

>and Surveillance page, where we are adding others links suggested by some of
>you, as well as to the WIPnet page.
>
>But now how about some discussion about my proposal and not just a feeding
>frenzy for $200 SS modems? :)
>
>--Jon

That page indicates a price of $1679 for the Freewave stuff that is
mentioned on your web page.

John, W2FS

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

29. [ss] Re: Proposed Wireless Internet of Portable hosts

From: John Hansen <hansen@fredonia.edu>
Date: Wed, 27 Jan 1999 18:28:08 -0500
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-1683-1999.01.27-17.28.41--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Scratch that, I should have written $1250.

John, W2FS

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

30. [ss] Re: Proposed Wireless Internet of Portable hosts

From: Bob Lorenzini <hwm@netcom.com>
Date: Wed, 27 Jan 1999 15:53:57 -0700 (MST)
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-1687-1999.01.27-17.38.16--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

On Wed, 27 Jan 1999, Jon Roland wrote:

> But now how about some discussion about my proposal and not just a feeding
> frenzy for $200 SS modems? :)
>
> --Jon

Well color me jaded but I'm turned off by a proposal predicated on doom
and gloom the sky is gonna fall in the new millenium, and baited with
$200 modems that don't exist. :-(Quite of few of us on this list have
suffered dissapointment in the past on a failed group buy that had a lot
more going for it than vailed references, but then thats just my opinion.

Bob - wd6dod

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

31. [ss] Re: Proposed Wireless Internet of Portable hosts

From: "Greg Jones, WD5IVD" <wd5ivd@tapr.org>
Date: Wed, 27 Jan 1999 17:27:59 -0600
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-1690-1999.01.27-17.42.18--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

That the price I know of John.

let us not forget that the best price that TAPR was ever going to get from
Freewave was over $300 each, but then they defaulted on the contract and
refused to provide radios at that price without a ton of exceptions to the
initial contract.

We just sent a nasty letter and decided it wasn't worth the lawyer fees to
do anything with them.

Also, these radios as in a multinode configuration was abysmal.

Cheer - greg

>At 02:14 PM 1/27/99 -0800, you wrote:
>>I found a database of wireless products, including spread spectrum modems,
>>that some of you might not be aware of. It is the Wireless LAN/MAN Modem
>>Product Directory http://hydra.carleton.ca/info/wlan.html
>>
>>Might find some good deals there. We added a link to it on our
>>Communications
>>and Surveillance page, where we are adding others links suggested by some of
>>you, as well as to the WIPnet page.
>>
>>But now how about some discussion about my proposal and not just a feeding
>>frenzy for $200 SS modems? :)
>>
>>--Jon
>
>That page indicates a price of $1679 for the Freewave stuff that is
>mentioned on your web page.
>
>John, W2FS
>
>
>---
>You are currently subscribed to ss as: WD5IVD@TAPR.ORG
>To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

-----
Greg Jones, WD5IVD Austin, Texas
wd5ivd@tapr.org http://www.tapr.org/~wd5ivd

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

32. [ss] Re: Proposed Wireless Internet of Portable hosts

From: "Scott D. Davilla" <davilla@4pi.com>
Date: Wed, 27 Jan 1999 19:01:03 -0500
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-1695-1999.01.27-18.01.22--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

>But now how about some discussion about my proposal and not just a feeding
>frenzy for $200 SS modems? :)

North Carolina is about 50,000 square miles in area. Assume %50 coverage and a $200 SS device with bit more than a mile outdoor range. 25,000 units at $200 is 5 million dollars. Multiply by 48 (sorry Hawaii and Alaska) is 240 million dollars. Say I'm sloppy in my estimates and divide this by two. Still 120 million.

The odds of anyone funding this vs spending the 120 million on real Y2K fixes is very low. The proposal would also provide a temporary fix, the Y2K problem would still be there.
In practical terms, I doubt that the power/teco companies would ignore any Y2K problems, the legal problems on failure would cost them several orders of magnitude more that fixing their problems.

I looked over the URL posted and there are some interesting looking devices at around $500 (250mW). Anything around 1W was $1k or more. Looks like the time is not right yet for a 1W $200 SS device.

Scott

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

33. [ss] Re: Proposed Wireless Internet of Portable hosts

From: Jon Roland <jon.roland@constitution.org>
Date: Wed, 27 Jan 1999 18:26:30 -0800
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-1760-1999.01.27-21.22.27--lyris.ss#tapr.org@lists.tapr.org>

Rendered body type: text/plain

Several points:

The fact that, according to Greg Jones, TAPR was close to a deal with Freewave for SS transceivers at $300 is a good sign. It seems likely that the abundance of 2.4 GHz transceivers being used in portable phones is likely to also soon make them available at such low prices, which have been falling rapidly, and in a competitive environment that seems like to drive prices down rapidly.

We are not necessarily limited to SS transceivers during the initial development phases. We could use VHF packet transceivers such as the Kenwood TH-D7A, for a while, or for longer links.

Many of the vendors are advertising 30 km ranges, under ideal conditions. This assumes longer antennas, but 2-3 meter whip antennas are man-portable.

We may not be limited to 1W, either by getting a waiver, our own dedicated band, or in an emergency.

Since even 2.4 GHz portable phones are getting a range of 2 km, I think we can plan on portable rigs with a range of say, 10-20 km.

Assuming a hex grid, and a range of 15 km, we can assume coverage of about 700 square km, with some overlap, a 150,000 square km region with 50% coverage means about 100 nodes. Assume twice that to allow for misplacement and nonavailability for various reasons.

The real costs are not so much for the transceivers as for the computers with enough hard disk storage to support store-and-forward. Compared to that, the transceivers are just another peripheral like a printer or scanner. Or a cell phone used to connect to the wired network.

Funding would be by individuals, who will justify their expenditures for other purposes than just supporting a WIPnet. People are already doing that. There is no question of competing expenditures for solving the Y2K problem. This is about Plan C (people not part of the Y2K problem-solving effort preparing for the consequences of the problems not getting solved).

The plan contemplates using other links if they are available in an emergency, such as wired links, satellites, HF, or whatever, but aiming to reduce or eliminate them if possible, in case they are unavailable. It also contemplates the use of means such as low-power, portable microbroadcasting rigs to spread information to the general public.

The WIPnet can be justified for many reasons besides preparation for Y2K, but that is a good reason to focus our efforts and resources. It can do what VHF ham transceivers are being used for now, but make more efficient use of bandwidth, and support the transfer of data, images, etc., that will be critical for emergency purposes.

--Jon KC5MYS

==========
Constitution Society, 1731 Howe Av #370, Sacramento, CA 95825
916/568-1022, 916/450-7941VM Date: 01/27/99 Time: 18:26:30
http://www.constitution.org/ mailto:jon.roland@constitution.org
==========

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

34. [ss] Re: Proposed Wireless Internet of Portable hosts

From: dwayne <ddraig@pobox.com>
Date: Thu, 28 Jan 1999 18:04:39 +1100
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-1791-1999.01.28-01.22.54--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Jon Roland wrote:

> I found a database of wireless products, including spread spectrum modems,
> that some of you might not be aware of. It is the Wireless LAN/MAN Modem
> Product Directory http://hydra.carleton.ca/info/wlan.html

This is a useful page, I think it may be maintained by a subscriber to this very list, although don't quote me on this. Unfortunately, though, a lot of these products are far too expensive for anything other than business uses. For your

idea to come to fruition, we need affordable wireless bandwidth, which is not
available, unless someone has some clever ideas.

> But now how about some discussion about my proposal and not just a feeding
> frenzy for $200 SS modems? :)

Sure. It's a great idea! Where can we find $200 radio modems to do it?

(Sure it's a great idea. It's not a new one. The Apple SuperNet proposal in I
think 1994 was a similar idea. My PunkNet Project at http://i.am/punknet/ has
been around since at least 1993. There's GuerillaNet. There's the Melbourne
Radio Network Project at http://members.xoom.com/ssswan/overview.htm All of
these are good ideas but are hampered by the expense of the transmission stage).

So, yes, you have a nice idea. But for it to come about requires devices, not
just ideas. If you have any ideas for cheap SS modems, let us know.

I spent last night looking around some motorola pages with a friend. They have
some *extremely* interesting micro controllers which may well be exactly what we
need. Unfortunately, I'm a history student and he's a biologist, so we were over
our heads. I'll post the relevant urls here if people are interested.

Dwayne
--
mailto:ddraig@pobox.com   http://i.am/dwayne

....return....to....the....source....

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

35. [ss] WLAN product directory at hydra

From: dwayne <ddraig@pobox.com>
Date: Thu, 28 Jan 1999 18:06:00 +1100
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-1792-1999.01.28-01.23.23--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

"Greg Jones, WD5IVD" wrote:

> Does everyone on the list here realize the the mainter of this site is your
> List moderator ?
>
> maybe not.

Heh, I knew it was someone from this list, but not the listowner.

This is funny   :-)

Dwayne
--
mailto:ddraig@pobox.com   http://i.am/dwayne

....return....to....the....source....

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

36. [ss] Re: Proposed Wireless Internet of Portable hosts

From: Eric Glover <compuman@zip.eecs.umich.edu>
Date: Thu, 28 Jan 1999 09:45:30 -0500 (EST)
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-1817-1999.01.28-08.46.45--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I know this might seem like an odd question, but is there a chance that
the 900 Mhz FSS project TAPR is working on will be ready in time? What is
the estimated cost of those units?

I have not read the recent details, but I know they were planning on
roughly 500 Kbits/sec and intended 20 Mile range. If these units are
cheap enough, why not consider using some of them?

Also, I wonder if it would be possible to convince the Cellular companies
to allow (in an emergency) their cells to be used as repeaters. Although
the data rate achievable by standard analog, or even new digital cell
phones is not terribly high, the density of cells may enable people (with
cell phones and appropriate equipment) to effectively increase their
coverage area. I rememeber hearing somewhere that an analog Cell tower at
3 W can go about 30 miles? Even if we could only get 9600bd through that
we would only need one person per cell, which is MUCH less than the number
of pepole required for other approaches....We could even in theory
(assuming the cell companies cooperated) have stationary boxes which tie
two channels together.

I am assuming in the event of a "failure" each local cell can operate
independently and can be rigged to simply act as a 3W repeater (for analog
channels in the 800Mhz band).

If we have functioning cellular networks (which I would not rely on), then
we might be able to allow longer distance cell-to-cell calls...

A final point: for long distance hops, will there be any satellites
operating...ones simple enough to likely survive the 2K rollover? Some
systems such as DSS for example have the ability to embed data on those
channels, with a store and forward architecture this might be
doable...even if we can only occasionaly use the link.

As much as I would love to see everyone on this list, and thousands of
volunteers all running around carying portable digital data links, I feel
it is unreasonable to assume we have a solid link across the country. If
people create local organizations and ensure that they can talk to their
immediate neighbors, and at least one link out to some "central" (or
"critical") "hub" we have a better chance of getting messages through.

We would only need a small (like 1 or 2 per major metropolitan area)
number of "other" links, hence it would be okay to spend $2K on them...

CYA,
Eric

- -
...an enormous body of information science literature is based on work
that *uses* relevance, without throughly understanding what it
means ... without an understanding of what relevance means *to*
users, it seems difficult to imagine how a system can retrieve relevant
information *for* users. -- Schamber, 1990
- -
                  Eric Glover -- compuman@eecs.umich.edu
             Grad student hoping to finish before the year 2000!

On Wed, 27 Jan 1999, Jon Roland wrote:

> Several points:
>
> The fact that, according to Greg Jones, TAPR was close to a deal with Freewave
> for SS transceivers at $300 is a good sign. It seems likely that the abundance
> of 2.4 GHz transceivers being used in portable phones is likely to also soon
> make them available at such low prices, which have been falling rapidly, and
> in a competitive environment that seems like to drive prices down rapidly.
>
> We are not necessarily limited to SS transceivers during the initial
> development phases. We could use VHF packet transceivers such as the Kenwood
> TH-D7A, for a while, or for longer links.
>
> Many of the vendors are advertising 30 km ranges, under ideal conditions. This
> assumes longer antennas, but 2-3 meter whip antennas are man-portable.
>
> We may not be limited to 1W, either by getting a waiver, our own dedicated
> band, or in an emergency.
>
> Since even 2.4 GHz portable phones are getting a range of 2 km, I think we can
> plan on portable rigs with a range of say, 10-20 km.
>

> Assuming a hex grid, and a range of 15 km, we can assume coverage of about 700
> square km, with some overlap, a 150,000 square km region with 50% coverage
> means about 100 nodes. Assume twice that to allow for misplacement and
> nonavailability for various reasons.
>
> The real costs are not so much for the transceivers as for the computers with
> enough hard disk storage to support store-and-forward. Compared to that, the
> transceivers are just another peripheral like a printer or scanner. Or a cell
> phone used to connect to the wired network.
>
> Funding would be by individuals, who will justify their expenditures for other
> purposes than just supporting a WIPnet. People are already doing that. There
> is no question of competing expenditures for solving the Y2K problem. This is
> about Plan C (people not part of the Y2K problem-solving effort preparing for
> the consequences of the problems not getting solved).
>
> The plan contemplates using other links if they are available in an emergency,
> such as wired links, satellites, HF, or whatever, but aiming to reduce or
> eliminate them if possible, in case they are unavailable. It also contemplates
> the use of means such as low-power, portable microbroadcasting rigs to spread
> information to the general public.
>
> The WIPnet can be justified for many reasons besides preparation for Y2K, but
> that is a good reason to focus our efforts and resources. It can do what VHF
> ham transceivers are being used for now, but make more efficient use of
> bandwidth, and support the transfer of data, images, etc., that will be
> critical for emergency purposes.
>
> --Jon KC5MYS
>
> ==
> Constitution Society, 1731 Howe Av #370, Sacramento, CA 95825
> 916/568-1022, 916/450-7941VM   Date: 01/27/99 Time: 18:26:30
> http://www.constitution.org/   mailto:jon.roland@constitution.org
> ==
>
>
> ---
> You are currently subscribed to ss as: COMPUMAN@EECS.UMICH.EDU
> To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org
>
>

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

37. [ss] Maxim Newsletter

From: Doug Crompton <wa3dsp@marconi.crompton.com>
Date: Thu, 28 Jan 1999 10:12:03 -0500 (EST)
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-1819-1999.01.28-09.12.28--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

My Maxim Wireless newsletter came yesterday and on about the fourth page
is an RF Consultants Design Showcase. It shows a 900mhz data transceiver
and a UHF data modem. Has anyone seen this?

Pardon me if this is a repeat message or already well known. I do not
view this list regularly.

Doug

****
* Doug Crompton   *
* Richboro, PA 18954   *
* 215-355-5307   *
*   *
* doug@crompton.com   *
* wa3dsp@wa3dsp.ampr.org *
* http://www.crompton.com *
****

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

38. [ss] Re: Proposed Wireless Internet of Portable hosts

From: "Greg Jones, WD5IVD" <wd5ivd@tapr.org>
Date: Thu, 28 Jan 1999 10:11:11 -0600
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-1827-1999.01.28-10.13.11--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

>I know this might seem like an odd question, but is there a chance that
>the 900 Mhz FSS project TAPR is working on will be ready in time? What is
>the estimated cost of those units?

Ready in time for what ? The world wide Y2K failure.

>As much as I would love to see everyone on this list, and thousands of
>volunteers all running around carying portable digital data links, I feel
>it is unreasonable to assume we have a solid link across the country. If
>people create local organizations and ensure that they can talk to their
>immediate neighbors, and at least one link out to some "central" (or
>"critical") "hub" we have a better chance of getting messages through.

I hate to burst anyones bubble, but if we truly believe the worse people
are forecasting (which I don't) then your best bet for technology will be
HTs with repeaters for local communications and HF communications for long
distance. Either require little infrastructure as compared to trying to a
SS network.

>We would only need a small (like 1 or 2 per major metropolitan area)
>number of "other" links, hence it would be okay to spend $2K on them...

You should read Tom McDermott's article published in the TAPR Spread
Spectrum update (http://www.tapr.org/taprf/html/Fpub.ss.html) on why you
can't build long networks of local type services stringing them together
without long distance networking. Most of us on this list have been there
in the early and mid-80's.

My suggestion would be to start honing your RTTY, AMTOR, and CLOVER on HF
and getting those local packet circuits working again or doing packet via a
voice repeater. The stuff is cheap. Works with existing radios and their
is already a large population with the equipment in place.

If you have less than a year, you don't have time to buy and implement new
stuff.

Cheers - Greg Jones, WD5IVD

Greg Jones, WD5IVD   Austin, Texas
wd5ivd@tapr.org   http://www.tapr.org/~wd5ivd

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

39. [ss] Re: Proposed Wireless Internet of Portable hosts

From: "Robert Eaglestone" <eaglesto@nortelnetworks.com>
Date: Thu, 28 Jan 1999 11:59:58 -0500
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-1837-1999.01.28-11.02.21--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Heck, when TAPR completes this project, I and at least 5 friends
will be looking to use the info to set up our own little private WAN.
Never mind Y2K and a national solution; we want to do it cheap
and local, because it sounds fun and cool.

> -----Original Message-----
> From: Eric Glover [SMTP:compuman@zip.eecs.umich.edu]
> Sent: Thursday, January 28, 1999 8:46 AM
> To: TAPR Spread Spectrum Special Interest Group
> Subject: [ss] Re: Proposed Wireless Internet of Portable hosts
>
> I know this might seem like an odd question, but is there a chance that
> the 900 Mhz FSS project TAPR is working on will be ready in time? What is
> the estimated cost of those units?
>
> I have not read the recent details, but I know they were planning on
> roughly 500 Kbits/sec and intended 20 Mile range. If these units are

> cheap enough, why not consider using some of them?
>

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

40. [ss] Breaking the $200 barrier

From: Johan Sosa <johan@wormhole.unixville.com>
Date: Thu, 28 Jan 1999 12:09:59 -0500 (EST)
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-1838-1999.01.28-11.07.27--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

How much will the TAPR FHSS radio cost when it is released?

I heard a guesstimate of $400 .. is this accurate? Also, will the design
be open so that third parties can create clones or compatible modems?
(it seems that way). According to the web page they seem to be making a
lot of progress. I hope they have the radios available by the end of the
year (actually I hope they have it available tomorrow ..but I try to be
realistic).

Maybe when the FHSS modems arrives it will be possible to start creating
the SS based wireless internet.

Also, does anyone have any idea how many people can be using the FHSS
radios in the same area while still getting decent throughput?
Btw, IMHO decent is about 28.8 kbps.

later,

Johan
KE4DAK

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

41. [ss] Re: Breaking the $200 barrier

From: "Greg Jones, WD5IVD" <wd5ivd@tapr.org>
Date: Thu, 28 Jan 1999 13:58:58 -0600
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-1855-1999.01.28-14.00.43--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

If you haven't read or listened to all the FHSS talks and papers, then the
first place to go is http://www.tapr.org/ss

Check under FHSS project. All of your answers to these questions will be
found on that page plus a lot more.

>How much will the TAPR FHSS radio cost when it is released?

Don't know. Depends on factors yet to be determined. How many are going
to be sold ? Is there a Part 15 market ? This radio in beta testing will
cost around $1000 each. Later in production all depends on how many are
being mfg.

>I heard a guesstimate of $400 .. is this accurate? Also, will the design
>be open so that third parties can create clones or compatible modems?
>(it seems that way). According to the web page they seem to be making a
>lot of progress. I hope they have the radios available by the end of the
>year (actually I hope they have it available tomorrow ..but I try to be
>realistic).

As with most TAPR product, the design will be available for license.

I highly doubt we will have radios by the end of the year. With luck we
will be in beta testing of some stage.

>Also, does anyone have any idea how many people can be using the FHSS
>radios in the same area while still getting decent throughput?
>Btw, IMHO decent is about 28.8 kbps.

Depends on the mode you have it setup for and how fast the radios will work
when we have them running.

In bridging mode where you use one central node to communicate to a few
then the more people you add the higher the latencies will be. After you
get more than say 3 or 4 users on the bridge it will then be time to switch
over to a multiple radio at the hub implementation. No software written
for that yet, but it is discussed in details in the papers on the project.

Cheers - Greg

Greg Jones, WD5IVD   Austin, Texas
wd5ivd@tapr.org   http://www.tapr.org/~wd5ivd

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

42. [ss] Re: Proposed Wireless Internet of Portable hosts

From: "Cureton David (NTC/MPD)" <david.cureton@ntc.nokia.com>
Date: Fri, 29 Jan 1999 00:16:00 +0200
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-1864-1999.01.28-16.17.46--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

One thing I think that is being missed in this thread is what applications
are going to be run over this national network of SS nodes. Is critical that
you can communicate east coast to west coast? I can see the challenge factor
that would make this project interesting but of what other value it would be
I don't know.

In the even of a total electronic communication breakdown I predict that
people with revert back to the management of there immediate surroundings
not those 1000+ kms away.

In any case I am sure a postal service could still be maintained. All those
people that can no longer work because the power/telecom outage could be
recruited to sort the mail instead of the mail sorting machines in the even
of major deprivation of services.

As I see it the major issue to the northern hemisphere is that it will be
Winter. I would be more concerned about having a solution for
heating/cooking for the couple of weeks that there may be no
electricity/gas/oil.

Well, That's my humble opinion.

David

From: Eric Glover
To: TAPR Spread Spectrum Special Interest Group
Subject: [ss] Re: Proposed Wireless Internet of Portable hosts
Date: Thursday, 28 January, 1999 4:45PM

I know this might seem like an odd question, but is there a chance that
the 900 Mhz FSS project TAPR is working on will be ready in time? What is
the estimated cost of those units?

I have not read the recent details, but I know they were planning on
roughly 500 Kbits/sec and intended 20 Mile range. If these units are
cheap enough, why not consider using some of them?

Also, I wonder if it would be possible to convince the Cellular companies
to allow (in an emergency) their cells to be used as repeaters. Although
the data rate achievable by standard analog, or even new digital cell
phones is not terribly high, the density of cells may enable people (with
cell phones and appropriate equipment) to effectively increase their
coverage area. I rememeber hearing somewhere that an analog Cell tower at
3 W can go about 30 miles? Even if we could only get 9600bd through that
we would only need one person per cell, which is MUCH less than the number
of pepole required for other approaches....We could even in theory
(assuming the cell companies cooperated) have stationary boxes which tie
two channels together.

I am assuming in the event of a "failure" each local cell can operate
independently and can be rigged to simply act as a 3W repeater (for analog
channels in the 800Mhz band).

If we have functioning cellular networks (which I would not rely on), then
we might be able to allow longer distance cell-to-cell calls...

A final point: for long distance hops, will there be any satellites
operating...ones simple enough to likely survive the 2K rollover? Some
systems such as DSS for example have the ability to embed data on those
channels, with a store and forward architecture this might be
doable...even if we can only occasionaly use the link.

As much as I would love to see everyone on this list, and thousands of
volunteers all running around carying portable digital data links, I feel
it is unreasonable to assume we have a solid link across the country. If
people create local organizations and ensure that they can talk to their
immediate neighbors, and at least one link out to some "central" (or
"critical") "hub" we have a better chance of getting messages through.

We would only need a small (like 1 or 2 per major metropolitan area)
number of "other" links, hence it would be okay to spend $2K on them...

CYA,
Eric

 -
...an enormous body of information science literature is based on work
that *uses* relevance, without throughly understanding what it
means ... without an understanding of what relevance means *to*
users, it seems difficult to imagine how a system can retrieve relevant
information *for* users. -- Schamber, 1990
 -
                  Eric Glover -- compuman@eecs.umich.edu
             Grad student hoping to finish before the year 2000!

On Wed, 27 Jan 1999, Jon Roland wrote:

> Several points:
>
> The fact that, according to Greg Jones, TAPR was close to a deal with
Freewave
> for SS transceivers at $300 is a good sign. It seems likely that the
abundance
> of 2.4 GHz transceivers being used in portable phones is likely to also
soon
> make them available at such low prices, which have been falling rapidly,
and
> in a competitive environment that seems like to drive prices down rapidly.
>
> We are not necessarily limited to SS transceivers during the initial
> development phases. We could use VHF packet transceivers such as the
Kenwood
> TH-D7A, for a while, or for longer links.
>
> Many of the vendors are advertising 30 km ranges, under ideal conditions.
This
> assumes longer antennas, but 2-3 meter whip antennas are man-portable.
>
> We may not be limited to 1W, either by getting a waiver, our own dedicated
> band, or in an emergency.
>
> Since even 2.4 GHz portable phones are getting a range of 2 km, I think we
can
> plan on portable rigs with a range of say, 10-20 km.
>
> Assuming a hex grid, and a range of 15 km, we can assume coverage of about
700
> square km, with some overlap, a 150,000 square km region with 50% coverage
> means about 100 nodes. Assume twice that to allow for misplacement and
> nonavailability for various reasons.
>
> The real costs are not so much for the transceivers as for the computers
with
> enough hard disk storage to support store-and-forward. Compared to that,
the
> transceivers are just another peripheral like a printer or scanner. Or a
cell
> phone used to connect to the wired network.
>
> Funding would be by individuals, who will justify their expenditures for
other
> purposes than just supporting a WIPnet. People are already doing that.

There
> is no question of competing expenditures for solving the Y2K problem. This
is
> about Plan C (people not part of the Y2K problem-solving effort preparing
for
> the consequences of the problems not getting solved).
>
> The plan contemplates using other links if they are available in an
emergency,
> such as wired links, satellites, HF, or whatever, but aiming to reduce or
> eliminate them if possible, in case they are unavailable. It also
contemplates
> the use of means such as low-power, portable microbroadcasting rigs to
spread
> information to the general public.
>
> The WIPnet can be justified for many reasons besides preparation for Y2K,
but
> that is a good reason to focus our efforts and resources. It can do what
VHF
> ham transceivers are being used for now, but make more efficient use of
> bandwidth, and support the transfer of data, images, etc., that will be
> critical for emergency purposes.
>
> --Jon KC5MYS
>
> ==
> Constitution Society, 1731 Howe Av #370, Sacramento, CA 95825
> 916/568-1022, 916/450-7941VM   Date: 01/27/99 Time: 18:26:30
> http://www.constitution.org/   mailto:jon.roland@constitution.org
> ==
>
>
> ---
> You are currently subscribed to ss as: COMPUMAN@EECS.UMICH.EDU
> To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org
>
>

You are currently subscribed to ss as: CURETON@TRSMPD01ME.NTC.NOKIA.COM
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

---
You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

43. [ss] Re: Proposed Wireless Internet of Portable hosts

From: dwayne <ddraig@pobox.com>
Date: Fri, 29 Jan 1999 16:08:12 +1100
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-1917-1999.01.28-23.06.37--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Robert Eaglestone wrote:

> Heck, when TAPR completes this project, I and at least 5 friends
> will be looking to use the info to set up our own little private WAN.
> Never mind Y2K and a national solution; we want to do it cheap
> and local, because it sounds fun and cool.

I have a dozen friends here in Melbourne, Australia impatiently waiting for the
project to be ready, although the list of interested people is at the 30+ mark (
we want to start small to begin with) but we're getting impatient and are also
looking at doing something ourselves.

We lack any radio knowledge, though   :-)

So I suspect that the TAPR project will beat us to a finished product, but I'm
not fussed, I just want to link some systems together and play with distributed
processing and Inferno/Jini, I don't really care how it comes about so long as
it is fast and cheap. Low latency would be nice, but not critical

I had a look over some of motorola's monolithic chip designs the other night.
Are any of these useful? There are some impressively powerful single chip
processors, DSPs and clocks for sale at very low prices in quantity. But I lack
the knowledge to accurately evaluate their usefulness :-(

Dwayne (history student strangely metamorphosing into a network dude)
--
mailto:ddraig@pobox.com   http://i.am/dwayne

....return....to....the....source....

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

44. [ss] Re: If you really want some SS equipment to experiment with...

From: Steve Stroh N8GNJ <n8gnj@tapr.org>
Date: Thu, 28 Jan 1999 21:15:50 -0800
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-1920-1999.01.28-23.14.58--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

One of the more reasonably-priced vendors of Part 15 Spread Spectrum
equipment is O'Neill Connectivities, Inc. - OCI (http://www.ocilawn.com)
Given TAPR's timeline for completion of the Spread Spectrum Radio, and the
apparent interest on this list for "something to work with, and soon",
perhaps the OCI equipment will give you some ideas.

Of course, there's ALWAYS the group buy route of existing equipment if
someone is willing to do the grunt work of finding equipment at good
prices, gathering names and purchase commitments, collecting the money,
paying the vendor, distributing the purchased product, etc.

There's PLENTY of equipment out there...

Steve N8GNJ

At 16:08 1/29/99 +1100, you wrote:
>Robert Eaglestone wrote:
>
>> Heck, when TAPR completes this project, I and at least 5 friends
>> will be looking to use the info to set up our own little private WAN.
>> Never mind Y2K and a national solution; we want to do it cheap
>> and local, because it sounds fun and cool.
>
>I have a dozen friends here in Melbourne, Australia impatiently waiting
for the
>project to be ready, although the list of interested people is at the 30+
>mark (
>we want to start small to begin with) but we're getting impatient and are also
>looking at doing something ourselves.
>
>We lack any radio knowledge, though   :-)
>
>So I suspect that the TAPR project will beat us to a finished product, but I'm
>not fussed, I just want to link some systems together and play with
distributed
>processing and Inferno/Jini, I don't really care how it comes about so long as
>it is fast and cheap. Low latency would be nice, but not critical
>
>
>I had a look over some of motorola's monolithic chip designs the other night.
>Are any of these useful? There are some impressively powerful single chip
>processors, DSPs and clocks for sale at very low prices in quantity. But I
>lack
>the knowledge to accurately evaluate their usefulness :-(
>
>
>Dwayne (history student strangely metamorphosing into a network dude)
>--
>mailto:ddraig@pobox.com   http://i.am/dwayne
>
>....return....to....the....source....
>
>
>
>---
>You are currently subscribed to ss as: N8GNJ@TAPR.ORG
>To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

---
You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

45. [ss] Re: If you really want some SS equipment to experiment with...

From: "Jason Wagner" <jason@onyx.uasv.arizona.edu>
Date: Thu, 28 Jan 1999 22:28:15 -0700
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-1922-1999.01.28-23.20.35--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

if it means getting ss equpiment cheap, i'll volunteer.

> -----Original Message-----
> From: bounce-ss-5346@lists.tapr.org
> [mailto:bounce-ss-5346@lists.tapr.org]On Behalf Of Steve Stroh N8GNJ
> Sent: Thursday, January 28, 1999 10:16 PM
> To: TAPR Spread Spectrum Special Interest Group
> Subject: [ss] Re: If you really want some SS equipment to experiment
> with...
>
>
>
> One of the more reasonably-priced vendors of Part 15 Spread Spectrum
> equipment is O'Neill Connectivities, Inc. - OCI (http://www.ocilawn.com)
> Given TAPR's timeline for completion of the Spread Spectrum Radio, and the
> apparent interest on this list for "something to work with, and soon",
> perhaps the OCI equipment will give you some ideas.
>
> Of course, there's ALWAYS the group buy route of existing equipment if
> someone is willing to do the grunt work of finding equipment at good
> prices, gathering names and purchase commitments, collecting the money,
> paying the vendor, distributing the purchased product, etc.
>
> There's PLENTY of equipment out there...
>
> Steve N8GNJ
>
>
> At 16:08 1/29/99 +1100, you wrote:
> >Robert Eaglestone wrote:
> >
> >> Heck, when TAPR completes this project, I and at least 5 friends
> >> will be looking to use the info to set up our own little private WAN.
> >> Never mind Y2K and a national solution; we want to do it cheap
> >> and local, because it sounds fun and cool.
> >
> >I have a dozen friends here in Melbourne, Australia impatiently waiting
> for the
> >project to be ready, although the list of interested people is
> at the 30+
> >mark (
> >we want to start small to begin with) but we're getting
> impatient and are also
> >looking at doing something ourselves.
> >
> >We lack any radio knowledge, though   :-)
> >
> >So I suspect that the TAPR project will beat us to a finished
> product, but I'm
> >not fussed, I just want to link some systems together and play with
> distributed
> >processing and Inferno/Jini, I don't really care how it comes
> about so long as
> >it is fast and cheap. Low latency would be nice, but not critical
> >
> >
> >I had a look over some of motorola's monolithic chip designs the
> other night.
> >Are any of these useful? There are some impressively powerful
> single chip
> >processors, DSPs and clocks for sale at very low prices in
> quantity. But I
> >lack
> >the knowledge to accurately evaluate their usefulness :-(
> >
> >

> >Dwayne (history student strangely metamorphosing into a network dude)
> >--
> >mailto:ddraig@pobox.com   http://i.am/dwayne
> >
> >....return....to....the....source....
> >
> >
> >
> >---
> >You are currently subscribed to ss as: N8GNJ@TAPR.ORG
> >To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org
>
>
> ---
> You are currently subscribed to ss as: JASON@ONYX.UASV.ARIZONA.EDU
> To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org
>
>

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

46. [ss] Re: If you really want some SS equipment to experiment with...

From: "Greg Jones, WD5IVD" <wd5ivd@tapr.org>
Date: Thu, 28 Jan 1999 23:22:32 -0600
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-1924-1999.01.28-23.48.26--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Let us not forget that TAPR has a TALNET specail going on. Been in the
last several TAPR PSRs.

$550 for the router(PC/NOS)/radio(2.4G) combination and whatever the
shipping cost is to where they go. Docs are in ftp://ftp.tapr.org/talnet

Cheers _ Greg

>One of the more reasonably-priced vendors of Part 15 Spread Spectrum
>equipment is O'Neill Connectivities, Inc. - OCI (http://www.ocilawn.com)
>Given TAPR's timeline for completion of the Spread Spectrum Radio, and the
>apparent interest on this list for "something to work with, and soon",
>perhaps the OCI equipment will give you some ideas.
>
>Of course, there's ALWAYS the group buy route of existing equipment if
>someone is willing to do the grunt work of finding equipment at good
>prices, gathering names and purchase commitments, collecting the money,
>paying the vendor, distributing the purchased product, etc.
>
>There's PLENTY of equipment out there...
>
>Steve N8GNJ

Greg Jones, WD5IVD   Austin, Texas
wd5ivd@tapr.org   http://www.tapr.org/~wd5ivd

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To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

47. [ss] Re: Proposed Wireless Internet of Portable hosts

From: Jake Janovetz <janovetz@tempest.ece.uiuc.edu>
Date: Fri, 29 Jan 1999 08:11:35 -0600
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-2157-1999.01.29-08.19.02--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Dwayne, if you're interested, I have done a bit of work with the
68360 and RTEMS (a real-time OS, publicly available). Some time
ago, I told the TAPR-SS group about this but they weren't interested.
They're using XINU. The point is, I have ftpd, telnetd, and httpd
already written for RTEMS. In addition, a port of Kaffe is
underway to RTEMS (Kaffe is an Open Source JAVA for those of you
who don't know).

So, Dwayne, if you and your boys from down-under get working on

your own project, I'd be more than happy to send schematics and
code your way. I also have a good deal of experience with the
Motorola DSP if you choose to do your radio that way. It's MUCH
more flexible, but won't be as cheap as the TAPR modem.

I've built a highly flexible baseband transmitter/receiver for
the digital communications course here at the University of
Illinois. For more information, check out my home page.

    Cheers,
    Jake

On Fri, Jan 29, 1999 at 04:08:12PM +1100, dwayne wrote:
> Robert Eaglestone wrote:
>
> > Heck, when TAPR completes this project, I and at least 5 friends
> > will be looking to use the info to set up our own little private WAN.
> > Never mind Y2K and a national solution; we want to do it cheap
> > and local, because it sounds fun and cool.
>
> I have a dozen friends here in Melbourne, Australia impatiently waiting for the
> project to be ready, although the list of interested people is at the 30+ mark (
> we want to start small to begin with) but we're getting impatient and are also
> looking at doing something ourselves.
>
> We lack any radio knowledge, though   :-)
>
> So I suspect that the TAPR project will beat us to a finished product, but I'm
> not fussed, I just want to link some systems together and play with distributed
> processing and Inferno/Jini, I don't really care how it comes about so long as
> it is fast and cheap. Low latency would be nice, but not critical
>
>
> I had a look over some of motorola's monolithic chip designs the other night.
> Are any of these useful? There are some impressively powerful single chip
> processors, DSPs and clocks for sale at very low prices in quantity. But I lack
> the knowledge to accurately evaluate their usefulness :-(
>
>
> Dwayne (history student strangely metamorphosing into a network dude)
> --
> mailto:ddraig@pobox.com   http://i.am/dwayne
>
> ....return....to....the....source....
>
>
>
> ---
> You are currently subscribed to ss as: JANOVETZ@UIUC.EDU
> To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

--
   janovetz@uiuc.edu | Once you have flown, you will walk the earth with
 University of Illinois | your eyes turned skyward, for there you have been,
                        | there you long to return.   -- da Vinci
        PP-ASEL | http://www.ews.uiuc.edu/~janovetz/index.html

---
You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

48. [ss] TALNET

From: "Bret Berger" <bret@infowest.com>
Date: Fri, 29 Jan 1999 11:13:23 -0700
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-2215-1999.01.29-12.13.59--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Has anyone on the list set up a link using the the TALNET equipment? Any
comment on how they perform?

I have (bows head in shame) let my TAPR membership expire. Did the PSR give
any info about these devices not contained in the .PDF manuals on the FTP
site?

-bret

-----Original Message-----
From: Greg Jones, WD5IVD <wd5ivd@tapr.org>
To: TAPR Spread Spectrum Special Interest Group <ss@lists.tapr.org>
Date: Thursday, January 28, 1999 10:49 PM
Subject: [ss] Re: If you really want some SS equipment to experiment with...

>Let us not forget that TAPR has a TALNET specail going on. Been in the
>last several TAPR PSRs.
>
>$550 for the router(PC/NOS)/radio(2.4G) combination and whatever the
>shipping cost is to where they go. Docs are in ftp://ftp.tapr.org/talnet

---
You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

49. [ss] RE: TALNET

From: "Hare, Ed, W1RFI" <ehare@arrl.org>
Date: Fri, 29 Jan 1999 13:57:51 -0500
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-2224-1999.01.29-13.01.00--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

>I have (bows head in shame) let my TAPR membership expire.
>-bret

I had managed to do that too, but they were very kind and allowed me to
renew back to my expiration date. :-) I will be up for renewal again in
May, but I want to continue to support SS.

73 from ARRL HQ,
Ed Hare, W1RFI
ARRL Lab
225 Main St
Newington, CT 06111
860-594-0318
w1rfi@arrl.org

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50. [ss] Re: Proposed Wireless Internet of Portable hosts

From: "Jim K." <jimbok@i-2000.com>
Date: Fri, 29 Jan 1999 17:36:31 -0500
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-2246-1999.01.29-16.34.42--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

>Heck, when TAPR completes this project, I and at least 5 friends
>will be looking to use the info to set up our own little private WAN.
>Never mind Y2K and a national solution; we want to do it cheap
>and local, because it sounds fun and cool.
>

Same here.. It's Fun and Cool! I want to set up a local WAN with my
friends. People keep joking about the completion date, but for real, when
will it be ready?

Jim

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To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

51. [ss] Re: Proposed Wireless Internet of Portable hosts

From: "Mike Rafferty" <mraff@zoomnet.net>
Date: Fri, 29 Jan 1999 22:35:04 +0000
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-2249-1999.01.29-16.51.01--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

> This sucks, a proposal that references $200 units then when someone
> asks were they can buy them, they are told, follow this URL and go check
> out the various different vendor that might or might not publish prices.
> You got a reference or not. If not then the $200 price point is vapor.
> If you don't know the URL or can give a reference then posting a
> general reference to where one might yet the info is a waste of time for
> all involved.

Scott,

This sounds like BS to me. I may be wrong, but here in Appalachia. I don't
hear much about SS.......

Mike

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February 1999

Original source file: ss.9902
Source: http://ftp.tapr.org/tapr_history/SIG_Archives/spread-spectrum-sig/mail_archive/ss.9902

1. [ss] 900 Mhz Auction

From: Doug Bade <doug@clecom.com>
Date: Thu, 04 Feb 1999 23:30:38 -0500
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-3616-1999.02.04-22.33.19--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Hello SIG.
        Have I missed discussions, or is this news?? Feb 23rd opens auctions for the 902 -928 MHZ spectrum for Vehicle location sevices (LMS).
        The FCC is auctioning 904.000 - 909.750, and 919.750 - 921.500, and 921.750-927.500. We are clearly co secondary with part 15 devices. The repeater council in my area was un-aware of what the commission is about to auction. It clearly affects me as I have repeaters in this band.
        Even these new users (LMS) are secondary to the govt radiolocation services and ISM. Fed govt fixed and mobile services appear to have secondary status too. We are identified as "SECONDARY TO ALL OTHER USERS OF THE BAND" , along with part 15 devices. Will this have negative effect on the TAPR SS project?, or is this a good test of shared usage under busy operating conditions?
        I hope this doesn't seem like doom and gloom, as I have been waiting with alot of you for the 900 SS radio project to become available.

                        73.. Doug KB8GVQ ... doug@clecom.com
                                        Doug Bade
                                    doug@clecom.com

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

2. [ss] Re: 900 Mhz Auction

From: Dewayne Hendricks <dewayne@warpspeed.com>
Date: Thu, 4 Feb 1999 21:05:32 -0800
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-3623-1999.02.04-23.07.18--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

At 23:30 -0500 2/4/99, Doug Bade wrote:
> Hello SIG.
> Have I missed discussions, or is this news?? Feb 23rd opens
> auctions for
> the 902 -928 MHZ spectrum for Vehicle location sevices (LMS).
> The FCC is auctioning 904.000 - 909.750, and 919.750 - 921.500, and
> 921.750-927.500. We are clearly co secondary with part 15 devices. The
> repeater council in my area was un-aware of what the commission is about to
> auction. It clearly affects me as I have repeaters in this band.
> Even these new users (LMS) are secondary to the govt radiolocation
> services and ISM. Fed govt fixed and mobile services appear to have
> secondary status too. We are identified as "SECONDARY TO ALL OTHER USERS OF
> THE BAND" , along with part 15 devices. Will this have negative effect on
> the TAPR SS project?, or is this a good test of shared usage under busy
> operating conditions?
> I hope this doesn't seem like doom and gloom, as I have been
> waiting with
> alot of you for the 900 SS radio project to become available.

        The upcoming auction really changes nothing as far as the current pecking order in the 902-928 MHz band. The ARS maintains that same rights that it had. We are NOT secondary to Part 15 devices!! However, I can see how you might be confused because at the time the Commission released the R&O that changed Part 90 for this service, they added wording that lumped the ARS and Part 15 devices into a class in particular circumstances. This has to deal with what has been now called a 'presumption of non-interference' and sets forth guidelines under which an LMS operator can seek relief to interference to their operations by other users of the spectrum. If ARS and Part 15 operations have antennas at certain heights AGL and use certain power levels, then there is a presumption of non-interference to LMS operations.
        To give you the bottom line on all this, what this means is that there will soon be someone in certain metro areas across the

country who is going to want to operate in spectrum that they paid for. Any ARS operation in their parts of the band that causes interference to their operation and does not meet the 'presumption' test may be in for trouble.

Right now there are 528 licenses up for grabs and the FCC has only authorized three bidders (six applications were submitted). Until the auctions are over, we won't really know where things will stand.

TAPR closely follows all FCC matters that effects our membership and we will let you know just what the impact of this auction will be on ARS operations in the band as soon as the dust settles.

-- Dewayne Hendricks WA8DZP
Chairperson
TAPR Regulatory Affairs Committee

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

3. [ss] Re: ss digest: February 04, 1999

From: Darryl Smith <vk2tds@ozemail.com.au>
Date: Fri, 05 Feb 1999 19:27:12 +1100
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-3656-1999.02.05-02.38.10--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

But you still do not have 900-930 MHz for GSM phones, even after the Auction. This makes the USA about the only place in the world that I cannot use my phone. Sure there are other parts of the world I can't use it, but none so big.

My father even made a call from his GSM phone from a Game park in South Africa to me in Australia. I have called him on his Australian number and spoken to him in Thailand. If only the USA could get some 900 MHz GSM I could use it everywhere. And because the encryption is fairly good, I dont even need to request service in most parts of the world. I just turn the phone on.

Darryl VK2TDS

P.S. Anyone wanting to use 900 MHz devices during the Sydney Olympics had better watch out.

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

4. [ss] Re: ss digest: February 04, 1999

From: Steve Sampson <ssampson@usa-site.net>
Date: Fri, 5 Feb 1999 06:18:11 -0600 (CST)
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-3663-1999.02.05-06.18.50--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

> My father even made a call from his GSM phone from a Game park in South
> Africa to me in Australia. I have called him on his Australian number
> and spoken to him in Thailand. If only the USA could get some 900 MHz
> GSM I could use it everywhere. And because the encryption is fairly
> good, I dont even need to request service in most parts of the world. I
> just turn the phone on.

We currently have a Fascist Congress, and a Socialist Executive. Therefore anything with the word "encryption" is grounds for incarceration in a concentration camp. Beyond that, 900 MHz is a dumping ground, and not a place for commercial development. US wireless phones are heavily allocated about 30 MHz lower. You need to look into newer and better technology. The satellite systems will be affordable to anyone who is a world traveler.

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

5. [ss] Re: Proposed Wireless Internet of Portable hosts

From: dwayne <ddraig@pobox.com>
Date: Fri, 05 Feb 1999 17:58:28 +1100
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-3664-1999.02.05-06.22.56--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Jake Janovetz wrote:

> Dwayne, if you're interested,

unfortunately, I'm interested in everything :-)

> I have done a bit of work with the
> 68360 and RTEMS (a real-time OS, publicly available).

Aha. What did you come up with?

> Some time
> ago, I told the TAPR-SS group about this but they weren't interested.

Why not?

> They're using XINU. The point is, I have ftpd, telnetd, and httpd
> already written for RTEMS. In addition, a port of Kaffe is
> underway to RTEMS (Kaffe is an Open Source JAVA for those of you
> who don't know).

Hmmm. Okay. I run kaffe on my linux box.
Although, really, what we are after right now is transmission technologies, and then
we'll worry about operating systems and stuff afterwards.

> So, Dwayne, if you and your boys from down-under get working on
> your own project, I'd be more than happy to send schematics and
> code your way. I also have a good deal of experience with the
> Motorola DSP if you choose to do your radio that way. It's MUCH
> more flexible, but won't be as cheap as the TAPR modem.

Well, yes, we are interested, but totally clueless about this stuff.

So, um, sending me your stuff would be really nifty, and we might want to ask you some
questions about the stuff we find incomprehensible.

There's a heap of people in Canberra at the moment right now who are setting up a
network using obsolete WAVELan cards, they have 34 at the moment, and we are thinking
of buying about 20 - 40 ourselves as an interim setup until we can build our own
system.

But the canberra people have some radio people involved, so maybe I could see if they
want to help out.

so, yes please, basically   :-)

> I've built a highly flexible baseband transmitter/receiver for
> the digital communications course here at the University of
> Illinois. For more information, check out my home page.

Gah, offline right now, will look later.

>   PP-ASEL | http://www.ews.uiuc.edu/~janovetz/index.html

Dwayne
--
mailto:ddraig@pobox.com   http://i.am/dwayne

....return....to....the....source....

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

6. [ss] Re: ss digest: February 04, 1999

From: dwayne <ddraig@pobox.com>
Date: Fri, 05 Feb 1999 23:29:39 +1100
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-3665-1999.02.05-06.30.16--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Steve Sampson wrote:

> > My father even made a call from his GSM phone from a Game park in South
> > Africa to me in Australia. I have called him on his Australian number
> > and spoken to him in Thailand. If only the USA could get some 900 MHz
> > GSM I could use it everywhere. And because the encryption is fairly
> > good, I dont even need to request service in most parts of the world. I
> > just turn the phone on.
>
> We currently have a Fascist Congress, and a Socialist Executive.

Without getting into a stupid political shitfight, I find any use of the word "socialist" to describe any part of the US govt hysterically funny. However, I realise that this is rhetoric and you didn't really mean it, so I'll be quiet now.

> Therefore
> anything with the word "encryption" is grounds for incarceration in a
> concentration camp.

Um, hang on. You guys can't *export* encryption, but you can use it, can't you?

Dwayne
--
mailto:ddraig@pobox.com http://i.am/dwayne

....return....to....the....source....

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

7. [ss] Re: ss digest: February 04, 1999

From: Charles Brain <g4guo@arrl.net>
Date: Fri, 05 Feb 1999 12:40:23 +0000
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-3667-1999.02.05-06.44.39--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

dwayne wrote:
>
> Steve Sampson wrote:
>
> > > My father even made a call from his GSM phone from a Game park in South

etc etc etc

The next U.S - Europe argument is over the next generation UMTS phones! This should be fun!

By the way as an alien who has dealt with the U.S government, the biggest problem seems to be its shear size. It seems as if every other U.S citizen is a government employee of some sort or another! Still I guess it beats Welfare.

- Charles

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

8. [ss] Re: ss digest: February 04, 1999

From: "Greg Jones, WD5IVD" <wd5ivd@tapr.org>
Date: Fri, 5 Feb 1999 06:56:08 -0600
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-3669-1999.02.05-06.58.41--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Guys, this isn't USENET. Stick to the technical topic at hand or shift
over to USENET to fling stuff.

Cheers - Greg

Greg Jones, WD5IVD   Austin, Texas
wd5ivd@tapr.org   http://www.tapr.org/~wd5ivd

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

9. [ss] Re: ss digest: February 04, 1999

From: Jon Roland <jon.roland@constitution.org>
Date: Fri, 5 Feb 1999 11:12:26 -0800
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-3708-1999.02.05-13.14.16--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

  From: Steve Sampson <ssampson@usa-site.net>

> The
> satellite systems will be affordable to anyone who is a world traveler.

They are also a chokepoint, subject to monitoring, failure, and interdiction.
We need autonomous systems controlled by their users.

--------------End of Original Message-----------------

==
Constitution Society, 1731 Howe Av #370, Sacramento, CA 95825
916/568-1022, 916/450-7941VM   Date: 02/05/99 Time: 11:12:26
http://www.constitution.org/   mailto:jon.roland@constitution.org
==

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

10. [ss] Linux Symphony

From: Steve Sampson <ssampson@usa-site.net>
Date: Sat, 6 Feb 1999 20:31:23 -0600 (CST)
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Cc: ssampson@access.usa-site.net (Steve Sampson)
Message-ID: <LYR6751-3886-1999.02.06-20.31.57--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

This is a report on the Linux Symphony drivers I have been
installing. The result is an inexpensive wireless network.

Proxim has delayed their bridge device for over 2.5 months
now, and it will be in the $400 price class when it finally
does ship.

The linux driver removes any need for the bridge device.

I am able to report that the driver does work, and it works
very well through-out the house. The ping times average about
15 ms. I have three systems currently. One is a Win98 node,
the other two are Linux RedHat 5.2 machines. I spent last
weekend figuring out how to make the linux and Win98 work
together. The docs are complete, but the plug-n-play and
modules procedures were new to me. I just haven't messed
with those features. The Proxim cards are plug and play, so
you need to set that up on the linux.

The best way to do that is:

        pnpdump >/etc/isapnp.conf

and then go edit the conf file. I really had a hard time with
IRQ selection. I finally got IRQ 3 and IO address 0x200 to
work, and that's where I intend to say! When you reboot this
file will be read, and your Symphony will be ready for commands.

After you compile the module (instructions included), you can load it using:

        insmod rlmod irq=3 io=0x200 CardType=4

This will load the module and you can now command the card using
/usr/local/bin/rl2cfg like so:

        rl2cfg dev eth0 msta channel 3 sub 5 name BIGBOY
        rl2cfg dev eth0 secid secret

This second command is Proxims way of providing privacy so others
can't easily view your activity.   Now you're ready for the TCP/IP
routing:

        ifconfig eth0 10.0.0.1 netmask 255.0.0.0 broadcast 10.255.255.255
        ifconfig eth0 up
        route add default eth0

Something like that, your system may vary. In my system, I have an ethernet
card and a Symphony, so I use the same IP address on both cards, and enable
IP forwarding in the /etc/sysconfig/network file:

        FORWARD_IPV4=true

This will be set on next reboot.

I have not got this setup to work with the Win98 computer. It refuses to
see the Linux boxes. At this time I am downloading the latest drivers, and
will try and re-install. So that's the verdict, it works great on Linux, but
so far not with Win98 and linux. I did look at my spectrum analyzer to see
what the signal looks like. I was surprised at how wide it is! The device
is a slow hopper. It hops around rather randomly, and I was able to see all
devices with just a little whip antenna (the analyzer is not that good a
receiver with just an antenna). I intend to try and use this at 1/4 mile on
an outside antenna. From what I see on the analyzer I think it will work
pretty well.

Steve, N5OWK

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

11. [ss] Re: Linux Symphony

From: Brett Glass <brett@lariat.org>
Date: Sat, 06 Feb 1999 19:34:11 -0700
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Cc: ssampson@access.usa-site.net (Steve Sampson)
Message-ID: <LYR6751-3887-1999.02.06-20.34.57--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

You can do a similar thing with Lucent WaveLAN cards on
FreeBSD. The driver makes them act like LAN cards; the
OS can do bridging and routing.

--Brett Glass

At 08:31 PM 2/6/99 -0600, Steve Sampson wrote:

>This is a report on the Linux Symphony drivers I have been
>installing. The result is an inexpensive wireless network.

"Rules? This is the Internet." -- Dan Gillmor

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

12. [ss] Re: Linux Symphony

From: Steve Sampson <ssampson@usa-site.net>
Date: Sat, 6 Feb 1999 20:44:04 -0600 (CST)
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-3889-1999.02.06-20.44.40--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

How much is the WaveLAN?

The Proxim's are $150 retail, probably much less in boxes of 100.

Steve, N5OWK

> You can do a similar thing with Lucent WaveLAN cards on
> FreeBSD. The driver makes them act like LAN cards; the
> OS can do bridging and routing.

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

13. [ss] Re: Linux Symphony

From: Jon Roland <jon.roland@constitution.org>
Date: Sat, 6 Feb 1999 18:49:42 -0800
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-3891-1999.02.06-20.54.02--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Can we get a comparative analysis and evaluation of these and other
alternatives. We hear from those who have tried one thing and made it work,
but they don't talk about other things that they couldn't get to work, or to
work very well. We need some reports of side-by-side comparisons, for cost,
performance, reliability, and any other relevant attributes.

--Jon

==
Constitution Society, 1731 Howe Av #370, Sacramento, CA 95825
916/568-1022, 916/450-7941VM   Date: 02/06/99 Time: 18:49:42
http://www.constitution.org/   mailto:jon.roland@constitution.org
==

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

14. [ss] Re: Linux Symphony

From: Brett Glass <brett@lariat.org>
Date: Sat, 06 Feb 1999 20:18:26 -0700
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-3896-1999.02.06-21.19.09--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

There are several WaveLAN models with different bus connections
and frequencies; the price varies depending upon what you buy.
Price is probably more than for the Proxim, but they're better
stuff.

The Lucent cards have the advantage of working over a wider
area than the Proxims. There's a Japanese site which contains
free, downloadable software for FreeBSD that lets you set up
a campus-wide network, with portables "roaming" freely
between the coverage areas of base stations. Neat
stuff.

--Brett

At 08:44 PM 2/6/99 -0600, Steve Sampson wrote:

>How much is the WaveLAN?
>
>The Proxim's are $150 retail, probably much less in boxes of 100.
>
>Steve, N5OWK
>
>> You can do a similar thing with Lucent WaveLAN cards on
>> FreeBSD. The driver makes them act like LAN cards; the
>> OS can do bridging and routing.
>
>---
>You are currently subscribed to ss as: BRETT@LARIAT.ORG
>To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org
>

"Rules? This is the Internet." -- Dan Gillmor

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

15. [ss] Re: Linux Symphony

From: "Jim K." <jimbok@i-2000.com>
Date: Sat, 6 Feb 1999 22:22:56 -0500
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-3897-1999.02.06-21.21.21--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Where can I buy a set of WaveLan cards?

Jim

-----Original Message-----
From: Brett Glass <brett@lariat.org>
To: TAPR Spread Spectrum Special Interest Group <ss@lists.tapr.org>
Date: Saturday, February 06, 1999 10:18 PM
Subject: [ss] Re: Linux Symphony

>There are several WaveLAN models with different bus connections
>and frequencies; the price varies depending upon what you buy.
>Price is probably more than for the Proxim, but they're better
>stuff.
>
>The Lucent cards have the advantage of working over a wider
>area than the Proxims. There's a Japanese site which contains
>free, downloadable software for FreeBSD that lets you set up
>a campus-wide network, with portables "roaming" freely
>between the coverage areas of base stations. Neat
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>At 08:44 PM 2/6/99 -0600, Steve Sampson wrote:
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>>How much is the WaveLAN?
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>>> You can do a similar thing with Lucent WaveLAN cards on
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>>
>>---
>>You are currently subscribed to ss as: BRETT@LARIAT.ORG
>>To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org
>>
>
>
>"Rules? This is the Internet." -- Dan Gillmor
>
>---
>You are currently subscribed to ss as: JIMBOK@I-2000.COM
>To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org
>

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

16. [ss] Side by Side Comparisons

From: Steve Sampson <ssampson@usa-site.net>
Date: Sat, 6 Feb 1999 22:29:35 -0600 (CST)
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-3901-1999.02.06-22.30.07--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Here's all I can give you:

Proxim Symphony ISA Card

Cost	Performance	Reliability	Freq	Power	Max # Nodes
$150	1.6 Mbps	> 30 days so far	2.4 GHz	100 mW	10 per Master

Ping time with 1500 characters averages 55 ms

> We need some reports of side-by-side comparisons, for cost,
> performance, reliability, and any other relevant attributes.

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

17. [ss] Re: Linux Symphony

From: Brett Glass <brett@lariat.org>
Date: Sat, 06 Feb 1999 22:52:08 -0700
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-3910-1999.02.06-23.52.54--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

They have a bunch of regional distributors. The one in my area
happens to be Allied.

Normally, they're built into products; they won't have Part 15
certification without a tested system around them. Of course,
if you have your ticket, that's not a problem.

--Brett

At 10:22 PM 2/6/99 -0500, Jim K. wrote:

>Where can I buy a set of WaveLan cards?
>
>Jim
>
>
>-----Original Message-----
>From: Brett Glass <brett@lariat.org>
>To: TAPR Spread Spectrum Special Interest Group <ss@lists.tapr.org>
>Date: Saturday, February 06, 1999 10:18 PM
>Subject: [ss] Re: Linux Symphony
>
>
>>There are several WaveLAN models with different bus connections
>>and frequencies; the price varies depending upon what you buy.
>>Price is probably more than for the Proxim, but they're better
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>>
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>>free, downloadable software for FreeBSD that lets you set up
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>>between the coverage areas of base stations. Neat
>>stuff.
>>
>>--Brett
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>>>> FreeBSD. The driver makes them act like LAN cards; the
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>>>To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org
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>>
>>
>>"Rules? This is the Internet." -- Dan Gillmor
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>>To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org
>>
>

>
>---
>You are currently subscribed to ss as: BRETT@LARIAT.ORG
>To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org
>

"Rules? This is the Internet." -- Dan Gillmor

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

18. [ss] Re: Side by Side Comparisons

From: Brett Glass <brett@lariat.org>
Date: Sat, 06 Feb 1999 22:57:48 -0700
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-3911-1999.02.06-23.58.34--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I can give you SOME of the same information on the Lucent cards.

Price: Varies with model and quantity
Performance: 2 Mbps
Modulation scheme: DSSS
Reliability: We have a wireless LAN that's been running for 4 YEARS
 with no downtime
Frequency: 900 MHz or 2.4 GHz
Power: 250 mW on 900 MHz (more with amplifier; up to 1W ERP for Part 15 operation)
       100 mW on 2.4 GHz (more with amplifier; Part 15 describes allowable
                          power antenna gain combinations)
Max nodes: 255
Ping times: 5 ms typical

--Brett

At 10:29 PM 2/6/99 -0600, Steve Sampson wrote:

>Here's all I can give you:
>
>Proxim Symphony ISA Card
>Cost   Performance   Reliability   Freq   Power   Max # Nodes
>$150   1.6 Mbps   > 30 days so far   2.4 GHz 100 mW 10 per Master
>
>Ping time with 1500 characters averages 55 ms
>
>> We need some reports of side-by-side comparisons, for cost,
>> performance, reliability, and any other relevant attributes.
>
>---
>You are currently subscribed to ss as: BRETT@LARIAT.ORG
>To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org
>

"Rules? This is the Internet." -- Dan Gillmor

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

19. [ss] Re: Side by Side Comparisons

From: bm@lynx.ve3jf.ampr.org
Date: Sun, 7 Feb 1999 10:49:42 -0500 (EST)
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-3961-1999.02.07-09.50.20--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Brett Glass <brett@lariat.org> wrote:
> I can give you SOME of the same information on the Lucent cards.
>
> Price: Varies with model and quantity
> Performance: 2 Mbps
> Modulation scheme: DSSS
> Reliability: We have a wireless LAN that's been running for 4 YEARS
> with no downtime
> Frequency: 900 MHz or 2.4 GHz
> Power: 250 mW on 900 MHz (more with amplifier; up to 1W ERP for Part 15 operation)
>   100 mW on 2.4 GHz (more with amplifier; Part 15 describes allowable

One small correction: power output of the 2.4 GHz units is only 15 dBm (about 30 mW).
Even without amps, though, you can still get upwards of 10 miles line-of-sight with
cheap 23 dBi grid parabolic antennas if you can keep the feedline losses reasonable.

Barry

--
  Barry McLarnon VE3JF/VA3TCP | bm@hydra.carleton.ca
  Ottawa Amateur Radio Club | bm@lynx.ve3jf.ampr.org
  Packet Working Group | http://hydra.carleton.ca

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

20. [ss] Re: Side by Side Comparisons

From: Thomas Sailer <sailer@ife.ee.ethz.ch>
Date: Mon, 08 Feb 1999 13:00:15 +0100
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-4063-1999.02.08-06.01.01--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Brett Glass wrote:
>
> I can give you SOME of the same information on the Lucent cards.
> Ping times: 5 ms typical

Ok, but this is ping time with small packets?

1500 bytes ~= 10kbits
10kbits / 2 MBit/s ~= 5ms

Then take this 2 times (round trip) plus non negligible
channel access overhead, must be significantly more than
10ms.

Tom

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

21. [ss] Re: Side by Side Comparisons

From: Brett Glass <brett@lariat.org>
Date: Mon, 08 Feb 1999 05:03:44 -0700
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-4065-1999.02.08-06.04.36--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

At 01:00 PM 2/8/99 +0100, Thomas Sailer wrote:

>Ok, but this is ping time with small packets?

UNIX's ping utility uses small packets by default. What we're seeing
here is the latency. I actually rounded the number; the computer
measured 5.4 ms.

--Brett

"Rules? This is the Internet." -- Dan Gillmor

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

22. [ss] Vehicle Location Service

From: Terry Giles <terry@ramar.co.uk>
Date: Mon, 8 Feb 1999 12:17:31 +0000
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-4067-1999.02.08-06.17.44--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Hello SIG

Does anybody know anything about the spec. for these LMS-

Vehicle Location Systems that will be in the 902-928MHz band?

I am particularly interested in output power, probable duty cycle
and I assume that they will be DSSS to do the range calculations

Can anybody help.

73's de G4CDY

Terry Giles
RAMAR Technology Ltd
Airport House, Purley Way
Surrey CR0 0XZ UK
+44 (0) 181 781 1959
+44 (0) 181 781 1958 FAX
e-mail terry@ramar.co.uk

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

23. [ss] help

From: "Plamen Ganev" <pganev@c-map.it>
Date: Mon, 8 Feb 1999 15:12:34 -0800
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-4078-1999.02.08-08.35.21--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

help

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

24. [ss] Re: Side by Side Comparisons

From: Andrew Burgess <aab@cichlid.com>
Date: Tue, 9 Feb 1999 09:16:07 -0800
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-4281-1999.02.09-11.22.35--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

>At 01:00 PM 2/8/99 +0100, Thomas Sailer wrote:
>
>>Ok, but this is ping time with small packets?

>UNIX's ping utility uses small packets by default. What we're seeing
>here is the latency. I actually rounded the number; the computer
>measured 5.4 ms.

Linux and Solaris use 56 data bytes by default, which is 64 bytes
total packet size. You can set it as low a 8 bytes and still get
timing info. My ISP ping times are 40msec with the default 56
data bytes and 30msec with 8 bytes (128Kbps ISDN).

What are the boards ping times for 8 byte packets, just for
general interest? I'd guess it would shave a msec off the default
times.

Giant packets might be of interest too...

Thanks
Andy

--
Andrew Burgess
aab@cichlid.com
Available for software contract work: www.scruz.net/~cichlid

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

25. [ss] Re: Side by Side Comparisons

From: Brett Glass <brett@lariat.org>
Date: Tue, 09 Feb 1999 10:32:23 -0700
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-4291-1999.02.09-11.47.40--lyris.ss#tapr.org@lists.tapr.org>

Rendered body type: text/plain

At 09:16 AM 2/9/99 -0800, Andrew Burgess wrote:

>What are the boards ping times for 8 byte packets, just for
>general interest? I'd guess it would shave a msec off the default
>times.

These are 64-byte packets, using FreeBSD (original Berkeley UNIX).
They're going through the Ethernet, into a wireless bridge,
out over the air, and then back. So there's a minor amount of
delay due to bridging. Ping times are 4-5 ms. The packets
are so short that all we're seeing is latency.

--Brett

"Rules? This is the Internet." -- Dan Gillmor

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

26. [ss] Re: help

From: Joseph Reynolds <joseph@chicoma.la.unm.edu>
Date: Tue, 09 Feb 1999 13:38:53 -0700
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-4324-1999.02.09-14.41.21--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Plamen:

I have tried and tried to correct this. I am:

joseph@chicoma.la.unm.edu

, Not:

joseph@la.unm.edu

even though I seem to be getting my mail correctly. Please help correct
this if you can.

Joe Reynolds
joseph@chicoma.la.unm.edu

Plamen Ganev wrote:
>
> help
>
> ---
> You are currently subscribed to ss as: JOSEPH@LA.UNM.EDU
> To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

---
You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

27. [ss] Re: Side by Side Comparisons

From: Mike@Dent.Org
Date: Tue, 09 Feb 1999 22:54:55 +0000
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-4345-1999.02.09-16.56.09--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

> >At 01:00 PM 2/8/99 +0100, Thomas Sailer wrote:
> >
> >>Ok, but this is ping time with small packets?
>
> >UNIX's ping utility uses small packets by default. What we're seeing
> >here is the latency. I actually rounded the number; the computer
> >measured 5.4 ms.
>
> Linux and Solaris use 56 data bytes by default, which is 64 bytes
> total packet size. You can set it as low a 8 bytes and still get
> timing info. My ISP ping times are 40msec with the default 56
> data bytes and 30msec with 8 bytes (128Kbps ISDN).
>

> What are the boards ping times for 8 byte packets, just for
> general interest? I'd guess it would shave a msec off the default
> times.
>
> Giant packets might be of interest too...

Ooops, cant remember if we were talking about Wavelan or Proxim cards?
Anyways I have a link of about 4km using Wavelan cards (Version 2), here are
my results:-

First default 56 data bytes
--- 10.8.83.1 ping statistics ---
9 packets transmitted, 9 packets received, 0% packet loss
round-trip min/avg/max = 2.2/2.2/2.3 ms

now 8 data bytes
--- 10.8.83.1 ping statistics ---
11 packets transmitted, 11 packets received, 0% packet loss
round-trip min/avg/max = 1.8/1.8/1.8 ms

now 1472 data bytes (the largest allowed by the Karlbridge box at the other
end)
--- 10.8.83.1 ping statistics ---
11 packets transmitted, 11 packets received, 0% packet loss
round-trip min/avg/max = 17.9/17.9/18.3 ms

And if anybody is interested this next test is across 3 Wavelan links, first a
traceroute

traceroute to 10.8.16.1 (10.8.16.1), 30 hops max, 40 byte packets
 1 10.8.80.1 (10.8.80.1) 2.140 ms 2.111 ms 2.002 ms
 2 10.8.34.1 (10.8.34.1) 8.842 ms 8.857 ms 22.999 ms
 3 10.8.32.1 (10.8.32.1) 11.147 ms 11.295 ms 11.187 ms
 4 10.8.33.1 (10.8.33.1) 8.700 ms 11.386 ms 8.599 ms
 5 10.8.17.4 (10.8.17.4) 11.755 ms 11.086 ms 12.040 ms

8 data bytes.
--- 10.8.16.1 ping statistics ---
11 packets transmitted, 11 packets received, 0% packet loss
round-trip min/avg/max = 6.7/7.2/10.2 ms

And just for fun, 30k of data to a Linux box at the other end of the above
link:-

30008 bytes from 10.8.240.1: icmp_seq=10 ttl=58 time=476.3 ms

--- pisa ping statistics ---
11 packets transmitted, 11 packets received, 0% packet loss
round-trip min/avg/max = 470.1/516.1/597.1 ms

cheers
Mike

>
> Thanks
> Andy
>
> --
> Andrew Burgess
> aab@cichlid.com
> Available for software contract work: www.scruz.net/~cichlid
>
>
> ---
> You are currently subscribed to ss as: MIKE@LURPAC.LANCS.AC.UK
> To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

--
"I remember when NOS was NET and all you got was "Welcome to TTY-link.." "
 Mike Dent. G6PHF. Morecambe, Lancs. UK. | Mike@Dent.Org
 AMPRnet=g6phf@gb7mbb.ampr.org | http://www.lancs.ac.uk/staff/dentm/
 PGP Fingerprint=44 F5 22 C4 CB A2 3F 9F 73 9C 02 9F 0B 16 55 72

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

28. [ss] Re: help

From: Stefano Coccon <coccpce@mail.nauta.it>
Date: Tue, 09 Feb 1999 17:09:28 +0100
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-4418-1999.02.10-00.58.11--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Plamen Ganev wrote:

> help
>
> ---
> You are currently subscribed to ss as: COCCPCE@TAMATA.NAUTA.IT
> To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

---
You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

29. [ss] Re: Side by Side Comparisons

From: "Steve Sampson" <ssampson@usa-site.net>
Date: Wed, 10 Feb 1999 07:02:24 -0600
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-4434-1999.02.10-07.04.18--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

The Wavelan ping times are quite exceptional! Here's my
ping times with wired ethernet:

56 byte packets:
7 packets transmitted, 7 packets received, 0% packet loss
round-trip min/avg/max = 2.4/2.4/2.4 ms

8 byte packets:
6 packets transmitted, 6 packets received, 0% packet loss
round-trip min/avg/max = 2.2/2.2/2.3 ms

1472 byte packets:
8 packets transmitted, 8 packets received, 0% packet loss
round-trip min/avg/max = 8.7/8.9/9.1 ms

30008 byte packets:
15 packets transmitted, 15 packets received, 0% packet loss
round-trip min/avg/max = 84.8/87.8/114.2 ms

This test was with a Linux OS K6 233 MHz machine
to an Ascend Pipeline-50 ISDN router.

Now here's the Proxim Symphony ISA card (100ft indoors):
(antenna is sitting on my monitor)

Note: The Proxim cards seem to vary quite a bit, so a longer ping
time was used to smooth the average:

56 byte packets:
39 packets transmitted, 39 packets received, 0% packet loss
round-trip min/avg/max = 8.8/15.6/28.3 ms

8 byte packets:
42 packets transmitted, 42 packets received, 0% packet loss
round-trip min/avg/max = 8.9/20.9/44.9 ms

1472 byte packets:
30 packets transmitted, 30 packets received, 0% packet loss
round-trip min/avg/max = 33.3/37.5/60.3 ms

30008 byte packets:
18 packets transmitted, 18 packets received, 0% packet loss
round-trip min/avg/max = 780.6/818.2/913.3 ms

This test was run with a Linux OS AMD K6 233 MHz Machine
to a Win98 OS AMD K5 133 MHz machine.

Steve

-----Original Message-----
From: Mike@Dent.Org <Mike@Dent.Org>
To: TAPR Spread Spectrum Special Interest Group <ss@lists.tapr.org>
Date: Tuesday, February 09, 1999 4:56 PM
Subject: [ss] Re: Side by Side Comparisons

>Ooops, cant remember if we were talking about Wavelan or Proxim cards?
>Anyways I have a link of about 4km using Wavelan cards (Version 2), here
are
>my results:-

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

30. [ss] Question

From: Catalin Enescu <cenescu@datek.ro>
Date: Wed, 10 Feb 1999 15:42:19 +0200
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-4436-1999.02.10-07.42.57--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Hello

Can you tell me where I can get a copy of JNOS PC routing software?

Best regards,
Catalin Enescu

--

_____

  ()() DATEK TELECOM S.A.
   () Catalin ENESCU - Technical Support Engineer

Office: Blvd. N. Titulescu 1 Phone : (40)-1-312.04.01

Bl. A7, Sc. 3, Ap. 62 312.04.02

Bucharest, ROMANIA Fax : (40)-1-312.55.88

Mail: CP 28-02 Bucharest E-mail: cenescu@datek.ro

ROMANIA http ://www.datek.ro
_____

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

31. [ss] Re: Leaving [ss]

From: marmento@dotdmail.dotd.state.la.us
Date: Wed, 10 Feb 1999 09:53:01 -0500
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-4447-1999.02.10-09.52.42--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

6969I@lists.tapr.org

Michael

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

32. [ss] re: MAIL ALIASING Re: help

From: JOHN MALMBERG <LNUSSAT.JMALMBER@gmeds.com>
Date: Wed, 10 Feb 1999 18:49:58 -0500
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-4527-1999.02.10-17.51.12--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

>I have tried and tried to correct this. I am:
>
>joseph at chicoma.la.unm.edu
>
>, Not:
>joseph at la.unm.edu
>
>even though I seem to be getting my mail correctly. Please help correct
>this if you can.
>
>Joe Reynolds
>joseph at chicoma.la.unm.edu

What you are seeing is your mail service router is aliasing out the specific node name that your mail account is assigned to, and just using the domain name.

This is usually done on purpose and usually the users are told to only give out the domain name.

Regardless of the server that you are on, all incoming mail goes to the domain server for distribution to the specific mail server.

This allows the mail administrators to load balance the system by adding more mail routers or moving users to other systems, with out disrupting mail delivery.

It is your local mail administrators that will need to make the change, not the LIST administrators, if you still want to do it. You will also need to use your password to update your entry.

You should verify this with your local mail administrators.

It is a different case from mine, where the E-MAIL provider was changing the domain to one that did not belong to the organization that I was with.

-John
AX.25: WB8TYW@K4HRY.#MIDTN.TN.USA.NOAM
E-Mail: WB8TYW AT QSL.NET

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

33. [ss] 2.4Ghz chipsets?

From: Dirk Koopman <djk@tobit.co.uk>
Date: Thu, 11 Feb 1999 12:58:45 -0000 (GMT)
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-4620-1999.02.11-06.59.42--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

An opportunity is presenting itself to put together a network of high speed 'nodes' in the middle of the UK.

I would like to explore the possibilities of using 2.4Ghz SS gear, but I will need some higher power than that available under part 15.

Here in the UK we share our 2.4Ghz band with ISM but, in theory, could use part 15 stuff there with amplifiers.

There are a number of us who would like to put together a Ham 2.4Ghz radio/modem unit, can anybody recommend any of the various chipsets available in particular?

Dirk G1TLH

Dirk-Jan Koopman, Tobit Computer Co Ltd
At the source of every error which is blamed on the computer you will find at least two human errors, including the error of blaming it on the computer.

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

34. [ss] Re: 2.4Ghz chipsets?

From: Lyle Johnson <lylej@azstarnet.com>
Date: Thu, 11 Feb 1999 07:25:28 -0700
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-4644-1999.02.11-08.37.11--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

At work we are using the Harris chipset, added our own PA to bring it to
near 1 watt at the antenna. Fairly easy to work with. The HPA chip isn't
very good, and the antenna switch IC from Harris is not so great either,
but the rest of it seems to be OK.

There are design compromises that limit weak signal performance.

With omni antennas we got more than 12 km range...

Lyle

At 12:58 PM 2/11/99 -0000, you wrote:
>An opportunity is presenting itself to put together a network of high speed
>'nodes' in the middle of the UK.
>
>I would like to explore the possibilities of using 2.4Ghz SS gear, but I will
>need some higher power than that available under part 15.
>
>Here in the UK we share our 2.4Ghz band with ISM but, in theory, could use
>part 15 stuff there with amplifiers.
>
>There are a number of us who would like to put together a Ham 2.4Ghz
>radio/modem unit, can anybody recommend any of the various chipsets available
>in particular?
>
>Dirk G1TLH
>---
>Dirk-Jan Koopman, Tobit Computer Co Ltd
>At the source of every error which is blamed on the computer you will find
>at least two human errors, including the error of blaming it on the computer.
>
>
>
>---
>You are currently subscribed to ss as: LYLEJ@AZSTARNET.COM
>To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org
>
>

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

35. [ss] Max. voice delay

From: Raghuraman <raghum@sasi.com>
Date: Fri, 12 Feb 1999 09:03:46 +0530 (IST)
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-4818-1999.02.11-21.30.19--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Can anyone help me in knowing what is the max. allowed voice
delay.

regards
raghu

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

36. [ss] Re: Max. voice delay

From: Steve Sampson <ssampson@usa-site.net>
Date: Fri, 12 Feb 1999 06:53:00 -0600 (CST)
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>

Message-ID: <LYR6751-4880-1999.02.12-06.53.52--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

If you mean full-duplex real-time, then anything over .25 sec
becomes annoying.

> Can anyone help me in knowing what is the max. allowed voice
> delay.

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

37. [ss] JNOS Programmer -- Job Opportunity

From: "Richard Harrison" <atecinc@crosslink.net>
Date: Fri, 12 Feb 1999 09:59:58 -0600
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-4896-1999.02.12-09.05.35--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

US Govt agency intends to use an expanded form of JNOS in a segment of its national RF link structure.
Looking for a programmers/consultants to work in this effort.

Hourly rate and other particulars forthcoming. Interested? Send me an email with your resume.

atecinc@crosslink.net

Richard

38. [ss] Symphony as a bridge

From: "Plamen Ganev" <pganev@c-map.it>
Date: Fri, 12 Feb 1999 13:05:14 -0800
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-4922-1999.02.12-13.00.28--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

How do I calculate the antenna gains that are required to operate a couple
of symphony cards that are some 600meters apart?

I'll be setting up a bridge using a couple of linux boxes and the symphony
cards. The bridge should connect two buildings that are ~600meters apart and
their respective wired LANs.

However, there is no information on what type of antennas will be necessary
to cover this distance (line of sight is there). To be on the safe side, I
would have to use a couple of dual gain 1dBi/21dBi directional antennal, but
those are quite expensive. The plan is to use the RangeLan2 antennas that
should be compatible.

A would really appreciate any hints that you might have.

Thank you,
Plamen.

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

39. [ss] Re: Symphony as a bridge

From: Brett Glass <brett@lariat.org>
Date: Fri, 12 Feb 1999 12:32:05 -0700
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-4932-1999.02.12-13.33.03--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

The people who make spread spectrum equipment HATE to give antenna specs
or specify ranges. They depend too much on other factors, and FCC rules
don't give vendors much flexibility in what they do. (They have to certify
EVERY configuration, including base station and antenna.) Also, there
are matters such as Fresnel windows (line of sight isn't always enough!).

Also, unless this is a licensed ham rig, changing antennas isn't legal.
Sad but true.

--Brett

At 01:05 PM 2/12/99 -0800, Plamen Ganev wrote:

>How do I calculate the antenna gains that are required to operate a couple
>of symphony cards that are some 600meters apart?
>
>I'll be setting up a bridge using a couple of linux boxes and the symphony
>cards. The bridge should connect two buildings that are ~600meters apart and
>their respective wired LANs.
>
>However, there is no information on what type of antennas will be necessary
>to cover this distance (line of sight is there). To be on the safe side, I
>would have to use a couple of dual gain 1dBi/21dBi directional antennal, but
>those are quite expensive. The plan is to use the RangeLan2 antennas that
>should be compatible.
>
>A would really appreciate any hints that you might have.
>
>Thank you,
>Plamen.
>
>
>---
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>

"Rules? This is the Internet." -- Dan Gillmor

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40. [ss] down the road...

From: Jeff Balcerski <jeffab@yahoo.com>
Date: Fri, 12 Feb 1999 13:05:22 -0800 (PST)
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-4958-1999.02.12-15.06.00--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

As I sit here daydreaming about the wonders that the FHSS radio will
bring to the amateur radio networking community, I was thinking about
the vastly different network topography that will be introduced.
Currently, most network are based on a backbone system where links
tree out from the center. The FHSS radio will introduce the means to
communicate at a speed far exceeding current packet backbones. What I
imagine will occur is a "spaghetti" of node links rather than the
traditional heirarchy of fast backbone to slower nodes.
  My question is this: will this require new router protocols to be
developed to actually take advantage of the mish-mash of connections
that will spring up (hopefully) across the country when the radio is
released? Or will we try to fit the new technology into the old
paradigm? It seems to me that with enough nodes, a "fastest route"
routing algorithm would allow efficient, fault-tolerant use of the
network.
  Please excuse me if this question doesn't belong on this group or if
it's already been answered, but I'm really excited about the concept
of doing away with the traditional backbone-bottleneck problem. Any
information would be appreciated. Thanks!

Jeff Balcerski
KC8IZX

_____
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To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

41. [ss] Re: down the road...

From: Jon Roland <jon.roland@constitution.org>
Date: Fri, 12 Feb 1999 13:12:17 -0800
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>

Message-ID: <LYR6751-4960-1999.02.12-15.20.32--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

In response to Jeff Balcerski <jeffab@yahoo.com>, we can indeed look forward to being able to institute a network of portable nodes in a wireless internet that has no backbone, but there are several protocols that will need to be established to make it work. For more on that see my paper at http://www.constitution.org/wipnet/wipnet.htm

One problem is that if all the nodes are moving around randomly, so that only nodes in contact with one another know who is within reception range of whom, we need a different system than just IP numbers for routing. One solution is position reporting, and sending packets in the general direction of a target position, but then we must contend with network cul-de-sacs, and the need to find paths around temporary gaps in the network.

--Jon

==
Constitution Society, 1731 Howe Av #370, Sacramento, CA 95825
916/568-1022, 916/450-7941VM   Date: 02/12/99 Time: 13:12:17
http://www.constitution.org/   mailto:jon.roland@constitution.org
==

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To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

42. [ss] Re: down the road...

From: Gerry Creager <gerry@cs.tamu.edu>
Date: Fri, 12 Feb 1999 17:37:47 -0600
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-4990-1999.02.12-17.41.38--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Jeff Balcerski wrote:
>
>   As I sit here daydreaming about the wonders that the FHSS radio will
> bring to the amateur radio networking community, I was thinking about
> the vastly different network topography that will be introduced.
> Currently, most network are based on a backbone system where links
> tree out from the center. The FHSS radio will introduce the means to
> communicate at a speed far exceeding current packet backbones. What I
> imagine will occur is a "spaghetti" of node links rather than the
> traditional heirarchy of fast backbone to slower nodes.
>   My question is this: will this require new router protocols to be
> developed to actually take advantage of the mish-mash of connections
> that will spring up (hopefully) across the country when the radio is
> released? Or will we try to fit the new technology into the old
> paradigm? It seems to me that with enough nodes, a "fastest route"
> routing algorithm would allow efficient, fault-tolerant use of the
> network.

RSPF (Route Shortest Path First) made its debut in NOS/JNOS/TNOS... some years ago. (?Alan Cox?) It bears significant promise for the distributed, non-backbone systems FHSS will allow, but it may remain to be seen if that's the topogoly adopted. It may still be easier to use static routers in an evolution toward pure dynamic routing.

Of course, we may want to consider migrating away from pure tcp/ip toward, say, ATM... and allow the disconnected topology to rule in the manner it deems best.

73, gerry
n5jxs@tamu.edu

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43. [ss] Re: down the road...

From: "Derek J. Lassen" <kn6td@clubnet.net>
Date: Fri, 12 Feb 1999 17:46:35 -0800
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-5022-1999.02.12-20.10.15--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Not true.

ARP and DHCP (with short address lease times) are adequate to produce
connectivity.

OSPF will get you routeability.

What else do you need?

de KN6TD

At 01:12 PM 2/12/99 -0800, you wrote:
>In response to Jeff Balcerski <jeffab@yahoo.com>, we can indeed look forward
>to being able to institute a network of portable nodes in a wireless
internet
>that has no backbone, but there are several protocols that will need to be
>established to make it work. For more on that see my paper at
>http://www.constitution.org/wipnet/wipnet.htm
>
>One problem is that if all the nodes are moving around randomly, so that
only
>nodes in contact with one another know who is within reception range of
whom,
>we need a different system than just IP numbers for routing. One solution is
>position reporting, and sending packets in the general direction of a target
>position, but then we must contend with network cul-de-sacs, and the need to
>find paths around temporary gaps in the network.
>
>--Jon
>
>===
>Constitution Society, 1731 Howe Av #370, Sacramento, CA 95825
>916/568-1022, 916/450-7941VM   Date: 02/12/99 Time: 13:12:17
>http://www.constitution.org/   mailto:jon.roland@constitution.org
>===
>
>
>---
>You are currently subscribed to ss as: KN6TD@CLUBNET.NET
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>

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To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

44. [ss] Re: down the road...

From: Jon Roland <jon.roland@constitution.org>
Date: Fri, 12 Feb 1999 18:14:05 -0800
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-5023-1999.02.12-20.23.47--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

In principle, perhaps, but we need to test it in practice for a large network.
Consider having 100,000 nodes, all in motion (perhaps flying around in
aircraft), each with somewhat limited disk capacity, and each of which wants
to send an email message to another randomly-selected node on the network, the
location and connectivity of which is not known to the sender. Obviously, each
can broadcast a query to the entire network to attempt to establish a chain
connecting sender with receiver, but that would become a serious load on
available channel capacity if too many were doing so at the same time. Also,
the store-and-forward model assumes that if a node is unavailable, the message
will be stored at the closest available node, pending reacquisition and
transmission. How does the node to hold the message get selected when the
location and connectivity of the target is not known to any but perhaps a few
nodes that were in recent contact, but which are no longer in contact?

We need to test such a system. I expect dynamic routing to need some work to
make it robust.

--Jon

  From: "Derek J. Lassen" <kn6td@clubnet.net>

> ARP and DHCP (with short address lease times) are adequate to produce
> connectivity.

>
> OSPF will get you routeability.
>
> What else do you need?

---------------End of Original Message-----------------

===
Constitution Society, 1731 Howe Av #370, Sacramento, CA 95825
916/568-1022, 916/450-7941VM   Date: 02/12/99 Time: 18:14:05
http://www.constitution.org/   mailto:jon.roland@constitution.org
===

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To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

45. [ss] Re: down the road...

From: "Derek J. Lassen" <kn6td@clubnet.net>
Date: Fri, 12 Feb 1999 20:55:45 -0800
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-5037-1999.02.12-23.08.40--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Very few connects are to random hosts.

All hosts are not routers.

Routers know about each other.

A node whose routing just went stupid, for having moved out of range of its
previous authoritative router, will soon discover a new authority, even if
it has to tunnel to one.

But the fable of a great number of nodes randomly sending to other nodes
and demanding passgae is interesting, if only for its value as a negative
example.

*s) Derek
At 06:14 PM 2/12/99 -0800, you wrote:
>In principle, perhaps, but we need to test it in practice for a large
network.
>Consider having 100,000 nodes, all in motion (perhaps flying around in
>aircraft), each with somewhat limited disk capacity, and each of which wants
>to send an email message to another randomly-selected node on the network,
the
>location and connectivity of which is not known to the sender. Obviously,
each
>can broadcast a query to the entire network to attempt to establish a chain
>connecting sender with receiver, but that would become a serious load on
>available channel capacity if too many were doing so at the same time. Also,
>the store-and-forward model assumes that if a node is unavailable, the
message
>will be stored at the closest available node, pending reacquisition and
>transmission. How does the node to hold the message get selected when the
>location and connectivity of the target is not known to any but perhaps a
few
>nodes that were in recent contact, but which are no longer in contact?
>
>We need to test such a system. I expect dynamic routing to need some work to
>make it robust.
>
>--Jon
>
>------------------------
> From: "Derek J. Lassen" <kn6td@clubnet.net>
>
>> ARP and DHCP (with short address lease times) are adequate to produce
>> connectivity.
>>
>> OSPF will get you routeability.
>>
>> What else do you need?
>
>---------------End of Original Message-----------------
>
>===
>Constitution Society, 1731 Howe Av #370, Sacramento, CA 95825

>916/568-1022, 916/450-7941VM   Date: 02/12/99 Time: 18:14:05
>http://www.constitution.org/   mailto:jon.roland@constitution.org
>==
>
>
>---
>You are currently subscribed to ss as: KN6TD@CLUBNET.NET
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>

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To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

46. [ss] Re: down the road...

From: Jon Roland <jon.roland@constitution.org>
Date: Fri, 12 Feb 1999 21:26:36 -0800
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-5041-1999.02.12-23.42.54--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Derek envisions a different kind of network than I do. In the network I have
in mind:

All hosts are routers, if they need to be.

All routers are hosts, like any others, portable, in motion, and not always
accessible.

All host-routers are equal, and no host has a privileged or authoritative
status, other than that conferred on it by other hosts, on a host-by-host
basis, from one message to another.

The host-routers don't know about each other, other than what they can learn
from messages received over the network.

Each host can authenticate itself using a Diffie-Hellman protocol (such as RSA
or PGP). Senders and receivers have each other's public keys, and perhaps the
public keys of every other host on the network.

All host-routers are assumed to be insecure, subject to spoofing or
interdiction by hostile parties, and to capture of the operator's private key.

--Jon

  From: "Derek J. Lassen" <kn6td@clubnet.net>

> Very few connects are to random hosts.
>
> All hosts are not routers.
>
> Routers know about each other.
>
> A node whose routing just went stupid, for having moved out of range of its
> previous authoritative router, will soon discover a new authority, even if
> it has to tunnel to one.

---------------End of Original Message-----------------

==
Constitution Society, 1731 Howe Av #370, Sacramento, CA 95825
916/568-1022, 916/450-7941VM   Date: 02/12/99 Time: 21:26:37
http://www.constitution.org/   mailto:jon.roland@constitution.org
==

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

47. [ss] Re: down the road...

From: Eric Glover <compuman@zip.eecs.umich.edu>
Date: Sat, 13 Feb 1999 17:10:29 -0500 (EST)
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-5163-1999.02.13-16.12.14--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

> One problem is that if all the nodes are moving around randomly, so that only
> nodes in contact with one another know who is within reception range of whom,
> we need a different system than just IP numbers for routing. One solution is
> position reporting, and sending packets in the general direction of a target
> position, but then we must contend with network cul-de-sacs, and the need to
> find paths around temporary gaps in the network.

If the movement of nodes is slow enough we can use an intelligent routing
protocol like gated..We can put in expiration times, and have TTLs to
ensure that as nodes DO move we don't have loops. If packets are
forwarded, as they get closer to the destination the routing nodes will
have the most recent information. The problems arise when we do have loops
because nodes are moving in/out of range....however it would not be too
hard to modify the protocol/routing information slightly to keep track of
the relative stability of a node, so you "prefer" not to send it to either
slow, or rapidly changing nodes...

I have not read the URL listed, so this might be a little out of
context...If you have any questions please feel free to ask me :-)

CYA,
Eric

>
> --Jon
>
> ==
> Constitution Society, 1731 Howe Av #370, Sacramento, CA 95825
> 916/568-1022, 916/450-7941VM   Date: 02/12/99 Time: 13:12:17
> http://www.constitution.org/   mailto:jon.roland@constitution.org
> ==
>
>
> ---
> You are currently subscribed to ss as: COMPUMAN@EECS.UMICH.EDU
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>
>

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

48. [ss] Standardized Addressing

From: "Andrew Cornwall" <cornwaab@ednet.ns.ca>
Date: Sat, 13 Feb 1999 22:59:41 -0400
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Cc: cornwaab@ednet.ns.ca
Message-ID: <LYR6751-5195-1999.02.13-21.01.51--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Hello,

     I am hesitant to post this message because
there must be something wrong in it. I have not seen
any reference to a standard for amateur radio
network addressing on the SS listserv, so I am wary
about introducing the topic. Either there is a horrible
flaw in the logic of what I am proposing or it has
already being adopted and I am far behind the pack.
My worst fear is that I have made a really stupid
mathematical error which has lead me astray. If the
idea has merit I want to initiate discussion.
Otherwise, I welcome your response to learn more
about the topic of amateur radio network addressing
- or mathematics, as the case may be. Given the
experimental nature of amateur radio digital
networks, with very few participants, the need for an
easy way to assign addresses may seem premature.
It is my opinion, however, that once high speed, and
reasonably powerful, digital transceivers and
software become readily available amateur radio
networking is going to flourish. Then a mechanism
for assigning network addresses will become a major
consideration if not figured out beforehand.

     I was reflecting on the presentation at the
1998 DCC by Norito Nemoto who proposed an

alternative identification system than IP addressing for amateur radio network packet routing. Mr. Nemoto recommended that the amateur radio station callsign be used instead. The advantages of using the call sign is that it is issued routinely by governments to all authorized amateur radio operators and it is intended to be unique world wide. The administration of call signs is tightly regulated, and does not have the additional overhead now associated with the administration of IP addresses for the Internet.

It seems, however, that abandoning the IP address structure could result in the need to modify many existing IP-based programs written for the Internet. New Internet software would also have to be modified. Is not there a way to retain the IP address 32 bit format and incorporate the callsign as well?

One scheme that comes to mind is to reformulate call signs into IP-like addresses using a standardized translation algorythm. If your call sign is XXX123 then your amateur radio network address would be nnn.nnn.nnn.nnn. Conversly, if your amateur radio network address is nnn.nnn.nnn.nnn then your call sign must be XXX123. As mentioned below, there could be a secondary address component to the amateur radio network address. I am not equipped to propose an algorythm here. It would likely be quite discontinuous, with a number of parts to account for how call signs are populated in each country and to handle special communications such as broadcast messages.

From a mathematical perspective, the 32 bit IP address space is big enough to go around, with 4,294,967,295 individual addresses. The present amateur radio call sign format of 6 alphanumaric characters (each having 36 posible values) comprises 2,176,782,336 unique call sign addreses (i.e 36^6). Thus, every concievable call sign could be represented in the 32 bit address structure. In fact, there are gaps in the alphanumeric sequence in the international allocation of call signs which means that the total number of posible call sign addresses would be closer to 1.35 billion. Some of the international allocation is dedicated to commercial broadcasting and other non-amateur applications. The actual address space needed for all of amateur radio would be much less than 1.35 billion. This means that there is room within the 32 bit amateur radio network address for each ham to have multiple addresses by default. These may be like the secondary IDs in packet radio, which the amateur can assign as he/she sees fit, e.g. base station, mobile, portable, router, node, whatever. If an amateur needs even more network addresses, he/she can acquire another call sign.

For the most part, there is no need to be concerned that amateur network addresses will overlap those on the Internet, because the two networks should be physically separate. Amateurs use primarily radio, the Internet is primarily hard wired. In those instances where the Internet is communicated by radio it does not utilize an amateur radio frequency, nor would it likely duplicate the amateur radio network modulation and data transmission formats. As far as the Internet is concerned, the amateur radio network would be an exotic private network, with its own 32 bit addressing insulated from the Internet itself.

There would, however, have to be reserved amateur radio network addresses to be used for gateways to the Internet. Their number would be relatively small and may comprise, or be a subset of,

the 44 series class A addressing now used by radio
amateurs. I do not know who would control the
allocation of these addresses, maybe the Internet
Network Information Centre (InterNIC), maybe
regional amateur radio network coordinators. But in
any event, only a comparatively few gateway
addresses would be needed.

     There would be some implicit geographical
hierarchical structure to amateur radio network
addresses from the fact that they would be derived
from the international allocation of call signs. Within
some countries, for example Canada, the first three
characters of a call sign also have regional
significance. In general, however, it would not be
practical to try to force the amateur radio network
address structure to conform to regional domains.
As indicated in recent discussions here, it should be
assumed that amateurs are mobile and would take
their call signs and network addresses with them
when temporarily away from home.

     The implementation of call sign based
network addresses does not seem all that difficult.
Once a suitable algorythm is determined it can be be
adopted by amateurs locally. Presumably, the
algorythm would not, for the time being, assign
network addresses in the 44 class A domain. Some
thought will have to go into determining the
algorythm, but I would hope that after suitable
examination and discussion of the various
constraints one could be formulated that would be
universally acceptable because it is workable and,
simply, that it exists.

Andrew Cornwall /VE1COR

cornwaab@ednet.ns.ca

Andrew Cornwall
Wellington, Nova Scotia
Canada

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

49. [ss] Re: Standardized Addressing

From: "Derek J. Lassen" <kn6td@clubnet.net>
Date: Sun, 14 Feb 1999 00:05:40 -0800
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-5241-1999.02.14-02.13.45--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I would like to point out that amatuers already have an address space,
specifically 44.n.n.n

Call signs are (in theory) mapable to IP address. Four/Four net has an 8
bit network part and a 24 bit host part. This gives us 16 million potential
hosts. Of course this address space is sparse. It it subdivided, given to
address coordinators to dole out. This is all well established.

Go to ftp://ftp.ucsd.edu/hamradio/amprhosts to get the mapping.

Next, consider that AX.25 is far from the ideal protocol to use for IP over
RF. I happen to think that ATM is a far better protocol. Each cell is 53
bytes long, 48 of which is payload. Of the 5 bytes of header, 24 bits are
for addressing, while the rest is used for link management. The addressing
bits actually identify which stream the cell belongs to, effectivly
seperating routing and switching. Routing happens on link establishment,
not in real time. It could be triggered by a sudden realization of link
status = FUBAR via repeated drops in C/N or higher layers going brain dead.
Switching happens in real time. Packets come in, packets go out. They don't
hang around (except for rate adjustment). There is no good reason to put
station call signs in every packet. Every ten minutes, CW identify the
transmitter.

You'd still have address 000...000 and 111...111 be recognized as multicast
- all nodes have a supervisory cell consumer - the control fabric.

At the edges of the RF zone would be RF vis wireline gateways. Due to all
the commercialism and smut flying around on The Internet most amatuers are
not willing to accept random traffic - refered to as inbound peering.
Basically, the gateway routers would accept routes only from preauthorized
IP addresses.

Gotta go. I'm getting sleepy.

(s) Derek

At 10:59 PM 2/13/99 -0400, you wrote:
>Hello,
>
>   I am hesitant to post this message because
>there must be something wrong in it. I have not seen
>any reference to a standard for amateur radio
>network addressing on the SS listserv, so I am wary
>about introducing the topic. Either there is a horrible
>flaw in the logic of what I am proposing or it has
>already being adopted and I am far behind the pack.
>My worst fear is that I have made a really stupid

>mathematical error which has lead me astray. If the
>idea has merit I want to initiate discussion.
>Otherwise, I welcome your response to learn more
>about the topic of amateur radio network addressing
>- or mathematics, as the case may be. Given the
>experimental nature of amateur radio digital
>networks, with very few participants, the need for an
>easy way to assign addresses may seem premature.
>It is my opinion, however, that once high speed, and
>reasonably powerful, digital transceivers and
>software become readily available amateur radio
>networking is going to flourish. Then a mechanism
>for assigning network addresses will become a major
>consideration if not figured out beforehand.
>
>   I was reflecting on the presentation at the
>1998 DCC by Norito Nemoto who proposed an
>alternative identification system than IP addressing
>for amateur radio network packet routing. Mr.
>Nemoto recommended that the amateur radio
>station callsign be used instead. The advantages of
>using the call sign is that it is issued routinely by
>governments to all authorized amateur radio
>operators and it is intended to be unique world wide.
>The administration of call signs is tightly regulated,
>and does not have the additional overhead now
>associated with the administration of IP addresses
>for the Internet.
>
>   It seems, however, that abandoning the IP
>address structure could result in the need to modify
>many existing IP-based programs written for the
>Internet. New Internet software would also have to
>be modified. Is not there a way to retain the IP
>address 32 bit format and incorporate the callsign as
>well?
>
>   One scheme that comes to mind is to
>reformulate call signs into IP-like addresses using a
>standardized translation algorythm. If your call sign
>is XXX123 then your amateur radio network
>address would be nnn.nnn.nnn.nnn. Conversly, if
>your amateur radio network address is
>nnn.nnn.nnn.nnn then your call sign must be
>XXX123. As mentioned below, there could be a
>secondary address component to the amateur radio
>network address. I am not equipped to propose an
>algorythm here. It would likely be quite
>discontinuous, with a number of parts to account for
>how call signs are populated in each country and to
>handle special communications such as broadcast
>messages.
>
>   From a mathematical perspective, the 32 bit
>IP address space is big enough to go around, with

>4,294,967,295 individual addresses. The present
>amateur radio call sign format of 6 alphanumaric
>characters (each having 36 posible values) comprises
>2,176,782,336 unique call sign addreses (i.e 36^6).
>Thus, every concievable call sign could be

>represented in the 32 bit address structure. In fact,
>there are gaps in the alphanumeric sequence in the
>international allocation of call signs which means
>that the total number of posible call sign addresses
>would be closer to 1.35 billion. Some of the
>international allocation is dedicated to commercial
>broadcasting and other non-amateur applications.
>The actual address space needed for all of amateur
>radio would be much less than 1.35 billion. This
>means that there is room within the 32 bit amateur
>radio network address for each ham to have multiple
>addresses by default. These may be like the
>secondary IDs in packet radio, which the amateur
>can assign as he/she sees fit, e.g. base station,
>mobile, portable, router, node, whatever. If an
>amateur needs even more network addresses, he/she
>can acquire another call sign.
>
>   For the most part, there is no need to be
>concerned that amateur network addresses will
>overlap those on the Internet, because the two
>networks should be physically separate. Amateurs
>use primarily radio, the Internet is primarily hard
>wired. In those instances where the Internet is
>communicated by radio it does not utilize an
>amateur radio frequency, nor would it likely
>duplicate the amateur radio network modulation and
>data transmission formats. As far as the Internet is
>concerned, the amateur radio network would be an
>exotic private network, with its own 32 bit
>addressing insulated from the Internet itself.
>
>   There would, however, have to be reserved
>amateur radio network addresses to be used for
>gateways to the Internet. Their number would be
>relatively small and may comprise, or be a subset of,
>the 44 series class A addressing now used by radio
>amateurs. I do not know who would control the
>allocation of these addresses, maybe the Internet
>Network Information Centre (InterNIC), maybe
>regional amateur radio network coordinators. But in
>any event, only a comparatively few gateway
>addresses would be needed.
>
>   There would be some implicit geographical
>hierarchical structure to amateur radio network
>addresses from the fact that they would be derived
>from the international allocation of call signs. Within
>some countries, for example Canada, the first three
>characters of a call sign also have regional
>significance. In general, however, it would not be
>practical to try to force the amateur radio network
>address structure to conform to regional domains.
>As indicated in recent discussions here, it should be
>assumed that amateurs are mobile and would take
>their call signs and network addresses with them
>when temporarily away from home.
>
>   The implementation of call sign based
>network addresses does not seem all that difficult.
>Once a suitable algorythm is determined it can be be
>adopted by amateurs locally. Presumably, the
>algorythm would not, for the time being, assign
>network addresses in the 44 class A domain. Some
>thought will have to go into determining the
>algorythm, but I would hope that after suitable
>examination and discussion of the various
>constraints one could be formulated that would be

>universally acceptable because it is workable and,
>simply, that it exists.
>
>Andrew Cornwall /VE1COR

>
>cornwaab@ednet.ns.ca
>
>Andrew Cornwall
>Wellington, Nova Scotia
>Canada
>
>---
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50. [ss] Re: Standardized Addressing

From: Gerry Creager <gerry@cs.tamu.edu>
Date: Sun, 14 Feb 1999 07:03:21 -0600
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-5257-1999.02.14-07.06.30--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

"Derek J. Lassen" wrote:
>
...
>
> Next, consider that AX.25 is far from the ideal protocol to use for IP over
> RF. I happen to think that ATM is a far better protocol. Each cell is 53
> bytes long, 48 of which is payload. Of the 5 bytes of header, 24 bits are
> for addressing, while the rest is used for link management. The addressing
> bits actually identify which stream the cell belongs to, effectivly
> seperating routing and switching. Routing happens on link establishment,
> not in real time. It could be triggered by a sudden realization of link
> status = FUBAR via repeated drops in C/N or higher layers going brain dead.
> Switching happens in real time. Packets come in, packets go out. They don't
> hang around (except for rate adjustment). There is no good reason to put
> station call signs in every packet. Every ten minutes, CW identify the
> transmitter.

ATM offers a variety of potential benefits to this picture.

gerry

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51. [ss] Re: Standardized Addressing

From: "Steve Sampson" <ssampson@usa-site.net>
Date: Sun, 14 Feb 1999 08:56:55 -0600
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-5269-1999.02.14-08.59.10--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

> Given the
>experimental nature of amateur radio digital
>networks, with very few participants, the need for an
>easy way to assign addresses may seem premature.
>It is my opinion, however, that once high speed, and
>reasonably powerful, digital transceivers and
>software become readily available amateur radio
>networking is going to flourish. Then a mechanism
>for assigning network addresses will become a major
>consideration if not figured out beforehand.

The main purpose of a callsign transmission is to identify
the station when it interferes with another. This is often
handy on VHF when say, one Police department is
swamped by another 200 miles away.

In the era of Spread Spectrum devices, radios are
designed to operate in the whole band. There is no
such thing as interference to compare with narrow-band
systems.

This callsign business is going to get us in hot water.

I've heard some say that they want us to identify in
narrow-band when we operate in Spread-Spectrum!
We don't want morse code as part of our Spread Spectrum
allocation.

There is no need to identify more than once every 10
minutes in any case. We have the case now, where
people ID every packet broadcast, and then again in
Morse Code every 10 minutes. This is right out of the 60's...

>   I was reflecting on the presentation at the
>1998 DCC by Norito Nemoto who proposed an
>alternative identification system than IP addressing
>for amateur radio network packet routing. Mr.
>Nemoto recommended that the amateur radio
>station callsign be used instead.

The packet address is about 56 bits. Ethernet is only 48 bits.

> The advantages of
>using the call sign is that it is issued routinely by
>governments to all authorized amateur radio
>operators and it is intended to be unique world wide.
>The administration of call signs is tightly regulated,
>and does not have the additional overhead now
>associated with the administration of IP addresses
>for the Internet.

The disadvantage is, that your network address would be
fixed, rather than dynamic, and controlled by a tightly
regulated government agency.

>   It seems, however, that abandoning the IP
>address structure could result in the need to modify
>many existing IP-based programs written for the
>Internet. New Internet software would also have to
>be modified. Is not there a way to retain the IP
>address 32 bit format and incorporate the callsign as
>well?

Yes, you can encode the callsign into 32 bits. Does
this callsign idea mean that it has to be readable
directly, or can it be decoded? No one is going to
operate with a modified IP. If it is not a standard, it
will fail.

>   For the most part, there is no need to be
>concerned that amateur network addresses will
>overlap those on the Internet, because the two
>networks should be physically separate. Amateurs
>use primarily radio, the Internet is primarily hard
>wired. In those instances where the Internet is
>communicated by radio it does not utilize an
>amateur radio frequency, nor would it likely
>duplicate the amateur radio network modulation and
>data transmission formats. As far as the Internet is
>concerned, the amateur radio network would be an
>exotic private network, with its own 32 bit
>addressing insulated from the Internet itself.

The network has to be routable though. Even though
it's on a different frequency, or format, an internet node
going to an Amateur Radio node will have to know how
to get there, and you can't duplicate anything at the
routing level. For HF Spread Spectrum each node
would probably be routable, while on VHF and higher,
a mobile node can use any range of address a node
issues, because it is basically point-to-point.

The 44-Net (amprnet) Class-A address, was basically
converted to a Class-B address, by dividing up the
second octets between states and countries, and then
these entities converted it to a Class-C address, in which
the end-user may get two or four static addresses grudgingly
from the Administrator.

Your routable IP address is probably a cable modem
or an ISP dial-up. The radio side can be locally administered.
Using any of the private IP ranges provided in the RFC's.

>   There would, however, have to be reserved
>amateur radio network addresses to be used for
>gateways to the Internet. Their number would be
>relatively small and may comprise, or be a subset of,
>the 44 series class A addressing now used by radio
>amateurs. I do not know who would control the
>allocation of these addresses, maybe the Internet
>Network Information Centre (InterNIC), maybe
>regional amateur radio network coordinators. But in
>any event, only a comparatively few gateway
>addresses would be needed.

Envision a cable modem or dialup with its dynamic or
fixed "routable" IP address. Then envision 10 Hams
roaming the streets, all within range of the routable node.
This routable node listens for stations who want a
mobile IP, and supplies an address to them which times
out after a couple of hours. The routable node then
masquerades the private IP range. Thus any mobile
node can reach the internet with any IP address the
routable node likes. It could be 44-Net, 10-Net,
172.16-Net, anything.

The problem with masquerade, is that the masquerade node
is not routable from the internet. One masqueraded node in
Allentown, could not exchange packets with another in Provo.
But I'm guessing with 32,000 ports, someone can resolve that
issue :-)

>As indicated in recent discussions here, it should be
>assumed that amateurs are mobile and would take
>their call signs and network addresses with them
>when temporarily away from home.

I would rather use a DHCP type of algorithm. Not a fixed
address. That is, a mobile user will ask for an IP, and the
nearest routable neighbor will provide it.

This brings up an interesting problem, suppose I don't
need a routable node? Suppose I just want to talk or
exchange pictures? Thus, the request for a temporary
IP must be coded to ask for a routable node, or just a
local node. Better yet, would be to just use a multicast
address, or develop a table of heard stations on each
of the 16 or so channels (LAN's) in the radio.

Which brings up a side point--Proxim, and I'm sure others,
use a privacy code to XOR the data with. In Proxim, the
code is 0x010203 (I think) if you use a NULL for the password.
Probably something that is non-standard...

>   The implementation of call sign based
>network addresses does not seem all that difficult.
>Once a suitable algorythm is determined it can be be
>adopted by amateurs locally. Presumably, the
>algorythm would not, for the time being, assign
>network addresses in the 44 class A domain. Some
>thought will have to go into determining the
>algorythm, but I would hope that after suitable
>examination and discussion of the various
>constraints one could be formulated that would be
>universally acceptable because it is workable and,
>simply, that it exists.

As you can tell from my previous comments, I don't think
a static system is the way to go. I would favor a completely
dynamic system of IP addresses, and thus could not be
callsign based. As you enter a region, you take on that
regions network. You should not try to drop a foriegn
network into a LAN. It is more work to make the foriegn
node mesh, and less work to issue a temporary IP.

And finally, it would take 10's of years to get Amateurs to
agree to any proposed algorithm, which would be obsolete
when it was released.

With this scheme, if we are forced to identify with morse code,
then we can issue a 20 WPM ident, with that wonderful callsign.

>
>Andrew Cornwall /VE1COR

Apologize for the length of my reply, and yes, I haven't read anything
about Mobile IP, or listened to the concepts... This is merely off the
cuff.

Steve Sampson, N5OWK

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52. [ss] Re: Standardized Addressing

From: cornwaab@ednet.ns.ca
Date: Sun, 14 Feb 1999 23:36:42 -0400
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-5438-1999.02.14-21.34.21--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Hello,

     I am pleased that my proposal for
standardized IP-like, 32 bit, addressing for
amateur radio networks (ARN addresses) has
generated a few responses. By way of
clarification, I want to expand on what I said
earlier and address some of the points that have
been made.

     The algorithm for mapping ARN
addresses to call signs would include every
possible call sign that government authorities
(e.g. FCC) may issue. As I noted previously, the
32 bit address space is sufficient to represent
every conceivable call sign several times, thus
each ham would automatically have multiple
unique ARB addresses to 'play with'. The
algorithm would be publically available to
download and run on the Internet or ARN
servers. The code for the algorithm would skip
over, i.e. not assign, ARN numbers that would
be used for mulitcasting, Internet interfacing,
etc. There will be a job to determine just what
those code combinations (000...000, 111...111,
loopback, etc,) might be in the context of
amateur radio networking. I am not sure that the
subnetworking concepts of the Internet would
apply to the mobile amateur radio world.

     In any case, the algorithm could be fairly
simple. In its crudest and least efficient form
comprising a program of six or seven nested
loops with maybe a dozen (?) IF (or CASE)
conditions to step past the reserved ARN
number combinations. This algorithm would be
reversible. That is you could input a call sign and
it would identify an ARN address (or multiple
addresses if more than one is calculated per call
sign). Conversely, you could input an ARN
address and it would identify a call sign. Either
way the algorithm works in exactly the same
manner and is unambiguous.

     Linking the ARN number to call signs
raises the prospect that call signs, as such, are
redundant in the amateur radio adaption of
TCP/IP communication! The ARN is sufficient
to identify the transmission of an amateur radio

station. Whether the FCC will accept this idea as a solution to the "you must identify every 10 minutes" problem will have to be seen. With tweeking, the algorithm could be made fairly fast and be built into the routing function. If a packet has an originator ARN number that does not correspond to a valid call sign in the official government issued call sign data base then it does not get routed any further.

The advantage of the pre-assignment of ARN addresses is that there is no need for administration by amateurs. And this would be true world-wide. I am under the impression that the current administration of AMPR.ORG IP numbers in the 44.n.n.n IP allocation is not perfect even in the United States and Canada. In countries which are less advanced the administration may be even more casual. As long as amateur radio TCP/IP communications is primarily local the existence of duplicate IP numbers in different regions (even within a country) is not likely a problem. Because there are very few radio amateurs who currently communicate digitally using TCP/IP, the administrative work of allocating addresses is probably not that big a burden. My prediction is, however, that given the availability of suitable digital communications equipment, and here is where spread spectrum is involved, amateur radio networking will flourish within several years. Network communications will be international and every ham will want an IP (or ARN) address or two to be able to use this facility now or at some point in the future. This is when the inadequate administrative resources will become a big problem and a big bottleneck. Indeed, problems will compound themselves.

My proposal is not to solve any problem of running out of IP addresses for hams. There are roughly 16 million addresses in the Class A, '44' space designated for amateur radio. If at some time 0.2% of the world's population decide to take up amateur radio then there may be a shortage of traditional IP addresses. The problem that may occur sooner, however, because the '44' series IP addresses have already been allocated internationally, and some countries will run out of IP addresses to dispense sooner than others. It is a thought that pre-assigning ARN addresses according to a call sign-based algorithm would mean that there could never be a shortage anywhere.

There appears to be some sentiment to stay with the '44' series of IP addresses for amateur radio networks in order to be in synchronization with the Internet. This would be a good thing if you want eventually transparent digital communications between amateur radio and the Internet. My guess is that within twenty, or so, years the Internet is going to become the communications medium for everything, data, telephony, tv, whatever. There will be mobile Internet access and roaming. Some would say the easier that it is for amateurs to make links to the resources on the Internet (now and in the future) the better. Others want amateur radio networks to be unique, with essentially home-grown resources. In the latter case, it does not matter that IP addresses and ARN addresses would, for the most part, duplicate each other. There will be a need, however, for amateur radio networks to access the Internet to route traffic 'over the hill' or between continents, but on the Internet side this could involve addresses, e.g. '44' series, that by agreement would not be utilized for networking on the radio side. These

Internet linking IP addresses would be reserved,
and not assigned, in the ARN address algorithm.

     I have not given much thought to the
issue of amateur radio being intimately
integrated into the Internet. My gut reaction is
that it would not be much fun.

     I do not know how using ATM for bare
packet communications would obviate the need
for IP addressing and transport quality control. I
think that ATM is in a different layer than
TCP/IP. It has been a long time since I looked
into ATM and I may need to be educated in this
regard.

     In my opinion, a lot of thought needs to
go into the advantages and disadvantages of
static verses dynamic addressing. In my proposal
the assignment of addresses would be static.
Would routing bog down if addresses are static?
Indeed, packet radio addressing, now by call
sign, is static, with hams attaching themselves to
various mail servers during their travels.

     I am getting tired. Enough for tonight.

     Thank you for reading this message.

--- Andy / VE1COR

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53. [ss] Re: Standardized Addressing

From: "smorris@mindspring.com" <smorris@mindspring.com>
Date: Sun, 14 Feb 1999 23:46:14 -0500
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-5449-1999.02.14-22.42.59--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I have not been home this past week and was able to just review it.

I want to provide the following for thought:

1) With one address per call sign you are limiting the radio user for only
one radio.

2) If you generate IP addresses based on call sign then there is really no
distibuted addressing, especially since the FCC does not require you to
request a new callsign when you move. So you could not subnet based on
area at least. If you assign addresses without the thought of subnetting
then every device within the 44.0.0.0 range is on one IP network. Only one
gateway could be on the Internet to connect the Internet to the Amateur
radio 44.0.0.0 network. Also as a result of being one network then all
traffic would have what is called one "Broadcast domain". This is a big
problem, because in a network any broadcast a device sends out must be sent
to every device. Even if you "bridge" or use a "switching bridge" on the
network, broadcasts(IP broadcasts) still go out everywhere. One request
would have to go everywhere across the world. You mention about spearate
from the internet. If that is so then we could use any address we wish,
and not just the 44.0.0.0 address.

These are just some of my thoughts. If you don't mind I would like to post
again once I have given some more thought.

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54. [ss] Re: Standardized Addressing

From: Thomas Sailer <sailer@ife.ee.ethz.ch>
Date: Mon, 15 Feb 1999 15:52:38 +0100
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-5565-1999.02.15-08.53.39--lyris.ss#tapr.org@lists.tapr.org>

Rendered body type: text/plain

"Derek J. Lassen" wrote:

> I would like to point out that amatuers already have an address space,
> specifically 44.n.n.n

Which makes me wonder if we have an IPv6 address space (apart from
the v4 compatibility range).

> Call signs are (in theory) mapable to IP address. Four/Four net has an 8
> bit network part and a 24 bit host part. This gives us 16 million potential
> hosts. Of course this address space is sparse. It it subdivided, given to
> address coordinators to dole out. This is all well established.
>
> Go to ftp://ftp.ucsd.edu/hamradio/amprhosts to get the mapping.

Too bad this system doesn't work so well in practice, due to the
sometimes lacking responsiveness of the coordinators and the much
too dynamic network, i.e. individual users far too often changing
their connectivity. Some sort of dynamic allocation seems much
better to me.

> Next, consider that AX.25 is far from the ideal protocol to use for IP over
> RF. I happen to think that ATM is a far better protocol. Each cell is 53

But you need something below ATM, as can be seen in the dozens of
research projects on wireless ATM currently under way.

> bytes long, 48 of which is payload. Of the 5 bytes of header, 24 bits are
> for addressing, while the rest is used for link management. The addressing

A FlexNet compressed AX.25 header is 8 bytes per up to 300 byte packet,
which is less overhead than ATM alone.

ATM does not make sense if you don't do QoS, and IMHO isn't much fun
at rates less than 1MBPS.

Tom

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55. [ss] Re: Standardized Addressing

From: "Steve Sampson" <ssampson@usa-site.net>
Date: Mon, 15 Feb 1999 18:57:21 -0600
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-5656-1999.02.15-18.59.48--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

>> I would like to point out that amatuers already have an address space,
>> specifically 44.n.n.n
>
>Which makes me wonder if we have an IPv6 address space (apart from
>the v4 compatibility range).

You won't need it.

>> Call signs are (in theory) mapable to IP address. Four/Four net has an 8
>> bit network part and a 24 bit host part. This gives us 16 million
potential
>> hosts. Of course this address space is sparse. It it subdivided, given to
>> address coordinators to dole out. This is all well established.
>>
>> Go to ftp://ftp.ucsd.edu/hamradio/amprhosts to get the mapping.
>
>Too bad this system doesn't work so well in practice, due to the
>sometimes lacking responsiveness of the coordinators and the much
>too dynamic network, i.e. individual users far too often changing
>their connectivity. Some sort of dynamic allocation seems much
>better to me.

I agree. The current encap system is antiquated and doesn't work. It's
secretive, and manual. Two things that put anything to death.

Basically what we have are a bunch of gateway nodes that share encap
tables who route amongst each other, but anyone else must first go to

UCSD and if they aren't broke, make the 12 node hop there before
getting onto the amprnet. It's completely bogus as we approach the
year 2000.

I finally just gave up and set up a tunnel to Dallas, a tunnel to Tulsa,
and an amprnet tunnel to New Hampshire :-) I let him do all the
hocus-pocus coordination, he seems to like it.

I think we could do the same thing with using SSH in some way
(I haven't thought about it, maybe PPP over SSH..).

I'm still of the old mentality, that is, a set of local LAN's that are
connected via wireline. I think this is good for emergencies, and
is good for connectivity within the LAN. I don't believe all this
Mobile moving around is going to change anything. I would like
to have a 2 meter 50 Watt Frequency Hopper that can handle at
least 1.6 Mbps. We should be able to use 144 - 148 and no one
would ever notice, just provide an operator menu to block out
frequencies that would cause others to not enjoy our being
neighbors. I'd really like the FCC to give Hams access to the
unused TV channels in each market. That way they wouldn't go
to waste like they are now. Let us use up to 50 Watts and get
rid of that "National Park system". Same with HF, I would love to
have the ARRL get off their Morse Code Ass and get us a bunch
of discrete frequencies we can hop on, as most Hams are
entrenched in their "NET" mentality, and they ain't moving till the
fricking die...

Steve

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56. [ss] Re: Standardized Addressing

From: "Andrew Cornwall" <cornwaab@ednet.ns.ca>
Date: Mon, 15 Feb 1999 21:02:03 -0400
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-5658-1999.02.15-19.06.51--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Hello,
        I would like to offer the following comments to the posting below.

1. There appears to be room for about three Amateur Radio
Network (ARN) 32 bit addresses for each ham by default. An
analysis of how each country issues call signs to broadcasters and
other non-amateur users may mean that there are blocks of call
signs that do not, and will never, be issued to a ham. This creates
the potential for more ARNs per ham. Certainly in Canada hams
utilize only a small block of the potential call signs that may ever be
issued here.

2. Distributed addressing would not occur. Are amateur radio IP
addresses distributed regionally now? Maybe in terms of states or
subdistricts but not in terms of how subregional routing patterns may
emerge in the future.

3. Yes, it would be difficult to subnet on the basis of IP addresses.
But hierarchical subnetting assumes a very structured network
architecture. If IP addresses are static, as they are now, then you
cannot move to another server in a subnet sense because you
would not conform to the subnet bit pattern. (By the way, subnetting
by bit pattern can waste a lot of IP addresses.) It seems to me that
subnetting can occur with static and varied ARN addresses, but it
would require registering IP adddresses individually to each subnet.

4. Broadcasting by common bit pattern, the way it is done now
would not be practical. Some other way would have to be worked out
based on the 'server sites' where ARN addresses are registered.

     Thanks for the opportunity to respond.

--- Andy / VE1COR

Date sent: Sun, 14 Feb 1999 23:46:14 -0500
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
From: "smorris@mindspring.com" <smorris@mindspring.com>
Subject: [ss] Re: Standardized Addressing
Send reply to: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>

> I have not been home this past week and was able to just review it.
>
> I want to provide the following for thought:
>
> 1) With one address per call sign you are limiting the radio user for only
> one radio.
>
> 2) If you generate IP addresses based on call sign then there is really no
> distibuted addressing, especially since the FCC does not require you to
> request a new callsign when you move. So you could not subnet based on
> area at least. If you assign addresses without the thought of subnetting
> then every device within the 44.0.0.0 range is on one IP network. Only
> one gateway could be on the Internet to connect the Internet to the
> Amateur radio 44.0.0.0 network. Also as a result of being one network
> then all traffic would have what is called one "Broadcast domain". This
> is a big problem, because in a network any broadcast a device sends out
> must be sent to every device. Even if you "bridge" or use a "switching
> bridge" on the network, broadcasts(IP broadcasts) still go out everywhere.
> One request would have to go everywhere across the world. You mention
> about spearate from the internet. If that is so then we could use any
> address we wish, and not just the 44.0.0.0 address.
>
> These are just some of my thoughts. If you don't mind I would like to
> post again once I have given some more thought.
>
>
> ---
> You are currently subscribed to ss as: CORNWAAB@EDNET.NS.CA
> To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org
>

Andrew Cornwall
Wellington, Nova Scotia
Canada

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

57. [ss] CDMA receiver,

From: Raghuraman <raghum@sasi.com>
Date: Tue, 16 Feb 1999 11:33:02 +0530 (IST)
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-5713-1999.02.15-23.59.43--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

What kind of receiver will be optimal, for CDMA in indoor
environment, where the average multipath delay is 50 nsec and
max delay is 300 nsec.
I don think one can go for rake receivers.
Can some help me out in this.

regards
raghu

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

58. [ss] Re: Standardized Addressing

From: "Derek J. Lassen" <kn6td@clubnet.net>
Date: Tue, 16 Feb 1999 01:44:10 -0800
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-5735-1999.02.16-03.50.46--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

The 44 net is no longer class A. Nor is it B or C or D. These terms are
obsolete. What we have now is called "Classless Inter Domain Routing
("CIDeR"). 44 net is called 44/8.

The Ampr.Org net is not a subnet so much as an internet. A segmented internet.

The subnets of *.ampr.org are (incompletely) interconnected via gateways
connected to The Internet and thru tunnels. Ideally, the router at the
gateway nearest your host will be named in your host's "default router"
list (for 44.0.0.0/8). If not, your host could discover the address of the
closest router via ARP.

The gateway routers would want to verify that the host that is arp'ing is
valid, probably thru some kind of shared secret handshake (eg public key).
This is unique to ampr.org gateways. I have heard of gateways which have
"blessed station" lists. Some of them just bang the FCC's data base and
assume that no spoofing happens. I think this is a little lax. ;)

There is no need to broadcast packets all around the world. If the gateway
doesn't know the host, it'll ask its default gateway. If the default
gateway is clueless, it'll ask its default gateway. This continues until a
so called authoritative router is found (ie the router with no default
gateway) (for 44.0.0.0 this is at ucsd.edu (btw, I think it is
bigmamma.ucsd.edu, but I haven't checked lately).

Unfortunately, there is no requirement to actually have hardware to get a
44 allocation. Or reachability. Or even the intent to ever have it. So just
because you've built a good node doesn't mean that there is a router nearby.

Alas....

73

Derek KN6TD

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

59. [ss] Re: Standardized Addressing

From: Thomas Sailer <sailer@ife.ee.ethz.ch>
Date: Tue, 16 Feb 1999 11:21:26 +0100
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-5737-1999.02.16-04.22.26--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Steve Sampson wrote:

> >Which makes me wonder if we have an IPv6 address space (apart from
> >the v4 compatibility range).
>
> You won't need it.

If you lease addresses dynamically, then indeed we won't need it,
but if we wanted to sensibly put the callsign into the IP address
(eg. for ident purposes), then yes, we'd need it.

Tom

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

60. [ss] Re: Standardized Addressing

From: Eric Glover <compuman@zip.eecs.umich.edu>
Date: Tue, 16 Feb 1999 10:22:38 -0500 (EST)
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-5773-1999.02.16-09.24.32--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

On Tue, 16 Feb 1999, Thomas Sailer wrote:

> Steve Sampson wrote:
>
> > >Which makes me wonder if we have an IPv6 address space (apart from
> > >the v4 compatibility range).
> >
> > You won't need it.
>
> If you lease addresses dynamically, then indeed we won't need it,

> but if we wanted to sensibly put the callsign into the IP address
> (eg. for ident purposes), then yes, we'd need it.
>
So what about the idea of having some DNS serving names based on Call
Signs?   Or something similar so people can have more than one address?

So maybe we could have X.somewhere.org
Where X is your call sign, and if you have more than one address you could
do X.X.soumewhere.org. This way we can always find people by call sign,
and we would only need as many addresses as there are users of the system,
as opposed to wasting lots of IP "numberspace."

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

61. [ss] Re: Standardized Addressing

From: Glenn Little <glittle@awod.com>
Date: Tue, 16 Feb 1999 11:20:00 -0500
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-5777-1999.02.16-10.20.26--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Amsat.org already provides callsign@amsat.oeg as a remailer. This gives
a transparent address to the people that send you email and gives you
the versatility to change ISPs as necessary without notifying the world
of the change.

73
Glenn
WB4UIV@amsat.org

Eric Glover wrote:
>
> On Tue, 16 Feb 1999, Thomas Sailer wrote:
>
> > Steve Sampson wrote:
> >
> > > >Which makes me wonder if we have an IPv6 address space (apart from
> > > >the v4 compatibility range).
> > >
> > > You won't need it.
> >
> > If you lease addresses dynamically, then indeed we won't need it,
> > but if we wanted to sensibly put the callsign into the IP address
> > (eg. for ident purposes), then yes, we'd need it.
> >
> So what about the idea of having some DNS serving names based on Call
> Signs?   Or something similar so people can have more than one address?
>
> So maybe we could have X.somewhere.org
> Where X is your call sign, and if you have more than one address you could
> do X.X.soumewhere.org. This way we can always find people by call sign,
> and we would only need as many addresses as there are users of the system,
> as opposed to wasting lots of IP "numberspace."
>
> ---
> You are currently subscribed to ss as: GLITTLE@AWOD.COM
> To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

---
You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

62. [ss] Re: Standardized Addressing

From: Dirk Koopman <djk@tobit.co.uk>
Date: Tue, 16 Feb 1999 17:38:48 -0000 (GMT)
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-5796-1999.02.16-11.40.00--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

WARNING
This is deeply unfashionable.
This has caused flamewars.
It isn't invented here (nor there).

This is not a complete solution but it may provide the spur required to build
a solution.

An essential thing to rememeber is that callsigns are unique, also there are
(compared to say the internet or telephones) comparitively few of them, a few
million worldwide (decreasing slowly :-(of which less than a million would
be using data. The callsigns may be mobile, but usually not.

Another principle is that the underlying transport mechanism will have
physical addressing mechanisms which has nothing to do with the one we humans
use.

Think about arp and ethernet for IP. Now think about a 'new' (cough, cough)
scheme with a transport mechanism independant 'arp', which is geographically
based with a mix of wire and wireless 'routes'.

Consider the UK BBS network Hierarchical addressing scheme (designed by G8ASO
years ago).

My BBS address is GB7TLH.#35.GBR.EU

The EU and the GBR are obvious, the #35 is zone 3 (east of england) county 5
(Norfolk).

In any area 'routers' are almost always fixed and therefore they know where
they are. They may be connected using any mechanism to their immediate peers
and/or their next level gateway.

Let us say that I can talk to routers called GB7NP.#35.GBR.EU and another one
called GB7OX.#36.GBR.EU. They must be connected one way or another to
GB7ES.#3.GBR.EU and therefore to each other. Now I can also talk to
K1XX.#51.NH.US.NOAM (doesn't matter how, I just can).

Now ignore the fact that I am a BBS, GB7TLH is unique (as is GB7TLH-1,
GB7TLH-45, GB7TLH-fred-1 etc). By connecting to a router I become part of that
router's address space. Again it doesn't matter how, use DHCP if is an IP
connection (if you like) or just plain ax25 to the local radio port of the
router.

I can be GB7TLH.#35.GBR.EU, GB7TLH.#36.GBR.EU or GB7TLH.#51.NH.US.NOAM, one
at a time or all at once.

The routers should be able to move packets to the correct place without
maintaining megabytes of state information.

Now given that we have a intelligent caching nameserving system that uses
information passed from the bottom up (i.e GB7TLH is connected or visible to
GB7NP.#35.GBR.EU or wherever). It should be possible to 'connect' to 'GB7TLH'
from anywhere in the world. This may mean that packets (maybe duplicates?) go
to more than one place.

Of course I am assuming that we are using a reasonable level 3/4 protocol
that copes with duplicates and so on (it doesn't have to be IP and it
probably isn't VC based).

You don't have to use the #35 mechanism (although it has the wonderful
property of being structured and 'subnetable') provided the number of
alphabetic bits of the name at each level is small you could use that.

The crucial bit though is the attachment of a unique entity (which could be
multipart [think callsign and ssid or callsign, machine and port]) coupled,
in realtime, to what is effectively a route.

Tin helmet is now firmly on and I am well dug in.
Dirk G1TLH

Dirk-Jan Koopman, Tobit Computer Co Ltd
At the source of every error which is blamed on the computer you will find
at least two human errors, including the error of blaming it on the computer.

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

63. [ss] addressing discussion

From: "Robert A. Buaas" <buaas@wireless.net>
Date: Tue, 16 Feb 1999 10:02:22 -0800 (PST)
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-5799-1999.02.16-12.03.27--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

May I respectfully ask that this discussion go somewhere else.
This list is about Spread Specturm, not networking topology.

Thanks All/bob

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

64. [ss] Re: Standardized Addressing

From: Jon Roland <jon.roland@constitution.org>
Date: Tue, 16 Feb 1999 11:08:43 -0800
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-5815-1999.02.16-13.15.35--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Coding the callsign in the IP address is not a good idea. Better would be to devote a header line to it, or use a DNS with domain names that include the callsign. An InterNIC-like domain management system is a possibility, but we should avoid any kind of central controlling authorities.

We should also allow for participation by non-hams who don't have callsigns. We are discussing solutions that use bands not necessarily assigned to licensed amateurs. That suggests that the protocols we adopt be able to segregate hams from non-hams, depending on the bands used, to keep everyone legal while facilitating as much communication as possible.

By the way, anybody in the Sacramento, CA, area I could network with on this?

--Jon KC5MYS

==
Constitution Society, 1731 Howe Av #370, Sacramento, CA 95825
916/568-1022, 916/450-7941VM   Date: 02/16/99 Time: 11:08:44
http://www.constitution.org/   mailto:jon.roland@constitution.org
==

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

65. [ss] Re: addressing discussion

From: Jon Roland <jon.roland@constitution.org>
Date: Tue, 16 Feb 1999 11:46:33 -0800
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-5825-1999.02.16-13.51.15--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

With all due respect, I don't think a discussion of spread spectrum is complete without discussion of addressing, which inevitably involves some considerations of network topology. SS is not just about physical transceivers. It is mostly about coding and addressing. More to the point, it is coding and addressing that we can do something about while we wait for other people to come up with hardware we can afford, and for which the work we can do might provide a market that someone will want to produce hardware for.

--Jon

  From: "Robert A. Buaas" <buaas@wireless.net>

> May I respectfully ask that this discussion go somewhere else.
> This list is about Spread Specturm, not networking topology.

---------------End of Original Message-----------------

==
Constitution Society, 1731 Howe Av #370, Sacramento, CA 95825
916/568-1022, 916/450-7941VM   Date: 02/16/99 Time: 11:46:33
http://www.constitution.org/   mailto:jon.roland@constitution.org
==

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

66. [ss] RE: Side by Side Comparisons

From: Dirk Koopman <djk@tobit.co.uk>
Date: Tue, 16 Feb 1999 21:05:48 -0000 (GMT)
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Cc: TAPR Spread Spectrum Special Interest Group <ss@lists.tapr.org>
Message-ID: <LYR6751-5840-1999.02.16-15.06.53--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Can you give me a supplier contact address, e-mail or telephone no in the US
please?

On 07-Feb-99 Steve Sampson wrote:
> Here's all I can give you:
>
> Proxim Symphony ISA Card
> Cost Performance   Reliability   Freq   Power   Max # Nodes
> $150 1.6 Mbps   > 30 days so far   2.4 GHz 100 mW 10 per Master
>
> Ping time with 1500 characters averages 55 ms

Dirk-Jan Koopman, Tobit Computer Co Ltd
At the source of every error which is blamed on the computer you will find
at least two human errors, including the error of blaming it on the computer.

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

67. [ss] Re: addressing discussion

From: "Steve Sampson" <ssampson@usa-site.net>
Date: Tue, 16 Feb 1999 19:01:12 -0600
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-5882-1999.02.16-19.03.28--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

It may be safe to say that a Spread Spectrum device which is
designed for data will have an IP address, and a device for voice
will not.

Thus, the group probably doesn't care about the minor details
of networking the devices. What you use for an IP address does
not really concern the radio oriented listeners.

Although before this discussion began, the list was basically dead
for the last six months, so maybe there's really nothing to talk about.

Adios,

Steve

-----Original Message-----
From: Jon Roland <jon.roland@constitution.org>
To: TAPR Spread Spectrum Special Interest Group <ss@lists.tapr.org>
Date: Tuesday, February 16, 1999 1:51 PM
Subject: [ss] Re: addressing discussion

>With all due respect, I don't think a discussion of spread spectrum is
>complete without discussion of addressing, which inevitably involves some
>considerations of network topology. SS is not just about physical
>transceivers. It is mostly about coding and addressing. More to the point,
it
>is coding and addressing that we can do something about while we wait for
>other people to come up with hardware we can afford, and for which the work
we
>can do might provide a market that someone will want to produce hardware
for.
>
>--Jon
>
>------------------------

> From: "Robert A. Buaas" <buaas@wireless.net>
>
>> May I respectfully ask that this discussion go somewhere else.
>> This list is about Spread Specturm, not networking topology.

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

68. [ss] Re: addressing discussion

From: Jon Roland <jon.roland@constitution.org>
Date: Tue, 16 Feb 1999 17:11:24 -0800
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-5887-1999.02.16-19.18.41--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

The reactivation of the list apparently began with my posting of my WIPNet proposal, which was about digital communications.

I would submit that SS strongly favors digital, except for trivial, 2-way communications. The need to exchange compatible frequency sequence codes to permit n-way communications introduces a digital element, even if the signal is analog voice, and by the nature of SS it makes more sense to be purely digital even if the message content is audio. Whether we want to send voice or data, we need to solve the same underlying digital protocol problems.

--Jon KC5MYS

  From: Steve Sampson <ssampson@usa-site.net>

> It may be safe to say that a Spread Spectrum device which is
> designed for data will have an IP address, and a device for voice
> will not.

---------------End of Original Message-----------------

==
Constitution Society, 1731 Howe Av #370, Sacramento, CA 95825
916/568-1022, 916/450-7941VM Date: 02/16/99 Time: 17:11:25
http://www.constitution.org/ mailto:jon.roland@constitution.org
==

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

69. [ss] Re: [SS:116] UNSUBSCRIBE

From: Jivodar Kuzmanov <vnpage@triada.bg>
Date: Wed, 17 Feb 1999 14:46:56 +0200
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-5971-1999.02.17-06.49.52--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I want to unsubscribe.

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

70. [ss] Re: [SS:116] UNSUBSCRIBE

From: "Steve Sampson" <ssampson@usa-site.net>
Date: Wed, 17 Feb 1999 07:01:10 -0600
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Cc: <vnpage@triada.bg>
Message-ID: <LYR6751-5976-1999.02.17-07.03.14--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Read the little letters down at the bottom of this message.

It's attached to every message. Move your mouse over those
little letters, and then click with the mouse.

This will bring up your mailer in which you then press the send

button.

I can send you a picture if you're interested?

Steve

-----Original Message-----
From: Jivodar Kuzmanov <vnpage@triada.bg>
To: TAPR Spread Spectrum Special Interest Group <ss@lists.tapr.org>
Date: Wednesday, February 17, 1999 6:49 AM
Subject: [ss] Re: [SS:116] UNSUBSCRIBE

>I want to unsubscribe.
>

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

71. [ss] Re: addressing discussion

From: Bob Lorenzini <hwm@netcom.com>
Date: Wed, 17 Feb 1999 07:41:24 -0700 (MST)
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-6007-1999.02.17-09.20.07--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

On Tue, 16 Feb 1999, Jon Roland wrote:

> With all due respect, I don't think a discussion of spread spectrum is
> complete without discussion of addressing, which inevitably involves some
> considerations of network topology. SS is not just about physical
> transceivers.

This is not the appropriate list for endless speculation on a only
somewhat related inflamatory issue. Please take it elsewhere. What say
moderator?

Bob - wd6dod

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

72. [ss] Re: addressing discussion

From: Jon Roland <jon.roland@constitution.org>
Date: Wed, 17 Feb 1999 10:34:45 -0800
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-6034-1999.02.17-12.43.37--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Excuse me, but what else is there to discuss except perhaps product features,
prices, and performance specs of transceivers? That is fine and welcome, but
only goes so far. SS transceivers are beyond the capability of amateurs to
manufacture. All we can do is develop software and protocols to make use of
them. Somebody needs to do that, and it appears it will be left to the amateur
community to do it, and to test the alternatives. What, pray tell, is
"inflammatory" about a joint effort at software and protocol development and
standards-setting, so we can make use of the transceivers? What is speculative
is discussion about pricing. Software and protocols is something within our
control.

--Jon

  From: Bob Lorenzini <hwm@netcom.com>

> On Tue, 16 Feb 1999, Jon Roland wrote:
>
> > With all due respect, I don't think a discussion of spread spectrum is
> > complete without discussion of addressing, which inevitably involves some
> > considerations of network topology. SS is not just about physical
> > transceivers.
>
> This is not the appropriate list for endless speculation on a only

> somewhat related inflamatory issue. Please take it elsewhere. What say
> moderator?

---------------End of Original Message-----------------

==
Constitution Society, 1731 Howe Av #370, Sacramento, CA 95825
916/568-1022, 916/450-7941VM   Date: 02/17/99 Time: 10:34:45
http://www.constitution.org/   mailto:jon.roland@constitution.org
==

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

73. [ss] Re: addressing discussion

From: Steve Bragg <steveb@skymaster.c2-tech.com>

Date: Wed, 17 Feb 1999 12:59:26 -0600
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-6043-1999.02.17-13.02.26--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Jon Roland wrote:

><snip> SS transceivers are beyond the capability of amateurs to manufacture.

Whoa! Nosirreee, bob! I have built an entire DS transmitter using
nothing but a PIC microprocessor and a couple of transistors. I've
prototyped FH transceivers using PICs, too.

Out of scope for amateurs? May it never be! Have you forgotten, sir,
that amateur radio operators CONCEIEVED and PIONEERED spread-spectrum
radio! Many involved in its development were working for their
goverment-contractor employers, granted, but they were ham operators
nontheless. The pioneering article, "Poisson, Shannon and the Radio
Amateur" appeared not in some thick-bearded engineering journal, but in
our own QST!

What about the TAPR efforts to put usable SS hardware out there? Well,
OK, so commercial hardware is a bit more polished... But that doesn't
mean amateurs can't do it.

I thought my spread-spectrum experiments were of a rudimentary nature
compared to what's being done by others. If there's nothing else to
talk about, though, maybe we should go through some of the
spread-spectrum hardware some of us have built.

Boy, am I gonna get flamed. Ah well. Something to talk about ;-)

Steve KA9MVA

--
Steve Bragg KA9MVA
Project Engineer
C2 Technologies, Inc.
100 Reunion Center, on Main Mall
9 East 4th
Tulsa, Oklahoma 74103
ICQ:29816109

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

74. [ss] Re: addressing discussion

From: "Hare, Ed, W1RFI" <ehare@arrl.org>

Date: Wed, 17 Feb 1999 14:11:50 -0500
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-6047-1999.02.17-13.15.50--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Steve KA9MVA writes:

> Boy, am I gonna get flamed. Ah well. Something to talk about ;-)

Not at all, Steve. It sounds like you have done some wonderful stuff!

> ><snip> SS transceivers are beyond the capability of amateurs to

manufacture.

> Whoa! Nosirreee, bob! I have built an entire DS transmitter using
> nothing but a PIC microprocessor and a couple of transistors. I've
> prototyped FH transceivers using PICs, too.

Whoa, indeed! Good job. Pardon my ignorance, but have these been published anywhere? I can think of lots of places, including naturally some ARRL pubs, where that info would be rabidly ready and used.

> I thought my spread-spectrum experiments were of a rudimentary nature
> compared to what's being done by others. If there's nothing else to
> talk about, though, maybe we should go through some of the
> spread-spectrum hardware some of us have built.

Yes, please! Let's get these ideas out on the table, into the STAs and available. I am just now starting to play with some Part 15 SS radios, but these are NOT optimized for SS, but optimized to meet the process gain requirements of Part 15 so the manufacturers can run 1 W instead of much lower power. They are NOT representative of what can be done with SS. They are also not duplicatable, not really programmable and do not represent the state of the art in SS, or the state of art that I believe that Amateur Radio is capable of.

You have just confirmed what I have always suspected -- there are experimenters doing good things with SS, but not reporting the results. If we are to make forward progress, wrt hardware, implementation, standardization, policy and regulatory issues, we can use all the information we can get. Me, I am just now learning more about this neat SS stuff, just like many here. I would LOVE to see some simple, duplicatable designs from innovative hams.

73 from ARRL HQ,
Ed Hare, W1RFI
ARRL Lab
225 Main St
Newington, CT 06111
860-594-0318
w1rfi@arrl.org

Visit the ARRL Website at http://www.arrl.org/.

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To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

75. [ss] Re: addressing discussion

From: "Hunter, Bob" <Bob_Hunter@ATK.COM>
Date: Wed, 17 Feb 1999 13:22:59 -0600
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-6049-1999.02.17-13.23.57--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I would like to echo Ed - I would like to see Steve's design published!

Bob aa0fg

Robert S. Hunter PE
Alliant Techsystems Inc.
Phone   612.931.7619
FAX   612.931.6512

> ----------
> From: Hare, Ed, W1RFI[SMTP:ehare@arrl.org]
> Sent: Wednesday, February 17, 1999 1:11 PM
> To: TAPR Spread Spectrum Special Interest Group
> Subject: [ss] Re: addressing discussion
>
> Steve KA9MVA writes:
>
> > Boy, am I gonna get flamed. Ah well. Something to talk about ;-)
>
> Not at all, Steve. It sounds like you have done some wonderful stuff!
>
> > ><snip> SS transceivers are beyond the capability of amateurs to
> manufacture.
>
> > Whoa! Nosirreee, bob! I have built an entire DS transmitter using

> > nothing but a PIC microprocessor and a couple of transistors. I've
> > prototyped FH transceivers using PICs, too.
>
> Whoa, indeed! Good job. Pardon my ignorance, but have these been
> published
> anywhere? I can think of lots of places, including naturally some ARRL
> pubs, where that info would be rabidly ready and used.
>
> > I thought my spread-spectrum experiments were of a rudimentary nature
> > compared to what's being done by others. If there's nothing else to
> > talk about, though, maybe we should go through some of the
> > spread-spectrum hardware some of us have built.
>
> Yes, please! Let's get these ideas out on the table, into the STAs and
> available. I am just now starting to play with some Part 15 SS radios,
> but
> these are NOT optimized for SS, but optimized to meet the process gain
> requirements of Part 15 so the manufacturers can run 1 W instead of much
> lower power. They are NOT representative of what can be done with SS.
> They
> are also not duplicatable, not really programmable and do not represent
> the
> state of the art in SS, or the state of art that I believe that Amateur
> Radio is capable of.
>
> You have just confirmed what I have always suspected -- there are
> experimenters doing good things with SS, but not reporting the results.
> If
> we are to make forward progress, wrt hardware, implementation,
> standardization, policy and regulatory issues, we can use all the
> information we can get. Me, I am just now learning more about this neat
> SS
> stuff, just like many here. I would LOVE to see some simple, duplicatable
> designs from innovative hams.
>
> 73 from ARRL HQ,
> Ed Hare, W1RFI
> ARRL Lab
> 225 Main St
> Newington, CT 06111
> 860-594-0318
> w1rfi@arrl.org
>
> Visit the ARRL Website at http://www.arrl.org/.
>
>
> ---
> You are currently subscribed to ss as: BOB_HUNTER@ATK.COM
> To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org
>

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To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

76. [ss] Re: addressing discussion

From: Jon Roland <jon.roland@constitution.org>
Date: Wed, 17 Feb 1999 11:15:31 -0800
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-6050-1999.02.17-13.24.14--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

In response to the excellent message from Steve Bragg KA9MVA, let us discuss whether we could build SS transceivers of commercial quality for less than $200, and how we might do it. But let us not neglect the software and protocol issues. To me mere transception between two hard-coded transceivers is not of much interest. I can buy and strip out the transceiver components from portable telephones that can do that. I want to be able to address a transmission to any or several of the transceivers within range, to be able to detect who is within range to address a message to, and to be able to control whether anyone else can detect me to send a message to me. And, yes, I want digital communications. Voice over digital, yes, but digital underneath.

--Jon KC5MYS

==
Constitution Society, 1731 Howe Av #370, Sacramento, CA 95825
916/568-1022, 916/450-7941VM   Date: 02/17/99 Time: 11:15:31
http://www.constitution.org/   mailto:jon.roland@constitution.org

```
=====================================================================


---
You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org
```

77. [ss] Re: addressing discussion

```
From: "Hwang, Wen-Ruey" <HWANGW@timken.com>
Date: Wed, 17 Feb 1999 14:56:23 -0500
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-6052-1999.02.17-13.57.27--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain
```

I am glad to hear Steve's idea to share his experience in DSSS and FHSS using a PIC microcontroller. Since I am new in this group and I am working on a project dealing with different kinds of sensors signal by the SS wireless, I hope this group can give me some guidance for speeding up my project.

I finished the front part to deal with the sensors signal such as temperature, strain gauge, and accelerometer using M68hc11 or PIC. Now I am looking for someone's help to send my sensor data to the Center station using SS wireless. If my system requires multi-points to point and around 200 ft in the industrial environment, can I make it by myself? How about using Harris chip sets or someone else?

Any information and experiences are very welcome.

Wen-Ruey Hwang
Principal Research Engineer
NDE & Sensor Technology
The Timken Company
Mail Code: RES-09
1835 Dueber Avenue, S.W.
P.O. Box 6930
Canton, Ohio 44706
Telephone: (330)471-2707
Facsimile: (330)471-2282

> -----Original Message-----
> From: Hunter, Bob [SMTP:Bob_Hunter@ATK.COM]
> Sent: Wednesday, February 17, 1999 2:23 PM
> To: TAPR Spread Spectrum Special Interest Group
> Subject: [ss] Re: addressing discussion
>
> I would like to echo Ed - I would like to see Steve's design published!
>
> Bob aa0fg
>
> Robert S. Hunter PE
> Alliant Techsystems Inc.
> Phone 612.931.7619
> FAX   612.931.6512
>
> > ----------
> > From: Hare, Ed, W1RFI[SMTP:ehare@arrl.org]
> > Sent: Wednesday, February 17, 1999 1:11 PM
> > To: TAPR Spread Spectrum Special Interest Group
> > Subject: [ss] Re: addressing discussion
> >
> > Steve KA9MVA writes:
> >
> > > > Boy, am I gonna get flamed. Ah well. Something to talk about ;-)
> > >
> > Not at all, Steve. It sounds like you have done some wonderful stuff!
> > >
> > > > ><snip> SS transceivers are beyond the capability of amateurs to
> > manufacture.
> > >
> > > > Whoa! Nosirreee, bob! I have built an entire DS transmitter using
> > > > nothing but a PIC microprocessor and a couple of transistors. I've
> > > > prototyped FH transceivers using PICs, too.
> > >
> > Whoa, indeed! Good job. Pardon my ignorance, but have these been
> > published
> > anywhere? I can think of lots of places, including naturally some ARRL
> > pubs, where that info would be rabidly ready and used.
> > >

> > > I thought my spread-spectrum experiments were of a rudimentary nature
> > > compared to what's being done by others. If there's nothing else to
> > > talk about, though, maybe we should go through some of the
> > > spread-spectrum hardware some of us have built.
> >
> > Yes, please! Let's get these ideas out on the table, into the STAs and
> > available. I am just now starting to play with some Part 15 SS radios,
> > but
> > these are NOT optimized for SS, but optimized to meet the process gain
> > requirements of Part 15 so the manufacturers can run 1 W instead of much
> > lower power. They are NOT representative of what can be done with SS.
> > They
> > are also not duplicatable, not really programmable and do not represent
> > the
> > state of the art in SS, or the state of art that I believe that Amateur
> > Radio is capable of.
> >
> > You have just confirmed what I have always suspected -- there are
> > experimenters doing good things with SS, but not reporting the results.
> > If
> > we are to make forward progress, wrt hardware, implementation,
> > standardization, policy and regulatory issues, we can use all the
> > information we can get. Me, I am just now learning more about this neat
> > SS
> > stuff, just like many here. I would LOVE to see some simple,
> duplicatable
> > designs from innovative hams.
> >
> > 73 from ARRL HQ,
> > Ed Hare, W1RFI
> > ARRL Lab
> > 225 Main St
> > Newington, CT 06111
> > 860-594-0318
> > w1rfi@arrl.org
> >
> > Visit the ARRL Website at http://www.arrl.org/.
> >
> >
> > ---
> > You are currently subscribed to ss as: BOB_HUNTER@ATK.COM
> > To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org
> >
>
> ---
> You are currently subscribed to ss as: HWANGW@TIMKEN.COM
> To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

---
You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

78. [ss] Re: addressing discussion

From: Robert_Manzanares@racalcomm.com
Date: Wed, 17 Feb 1999 15:18:31 -0500
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-6056-1999.02.17-14.21.02--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

-----Original Message-----
From: Steve Bragg [SMTP:steveb@skymaster.c2-tech.com]

<snip>

If there's nothing else to talk about, though, maybe we should go through some of the spread-spectrum hardware some of us have built.

Saaaaaaaaaaaaay, that might not be a bad idea. It just might be the spark some of us need to experiment :o) Other than ARRL book, I don't have any other reference for practical knowledge. I've been thinking about trying some of the DS stuff, but I can't find my "round tuit."

So, who's built what? Parts lists, schematics, and photo's if possible would be great.

Robert Manzanares

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To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

79. [ss] Re: Linux Symphony

From: "Steve Sampson" <ssampson@usa-site.net>
Date: Wed, 17 Feb 1999 16:49:10 -0600
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Cc: <ss@lists.tapr.org>
Message-ID: <LYR6751-6071-1999.02.17-16.51.27--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Hello Jeff,

Yep, yer right, I finally got the sucker going. I had
several emails with Dave, and we tried everything. I
finally downloaded new drivers and removed and
installed them again.

The feature that seemed to be the culprit was that
Maestro has a Network Profiles under Configure.
I think I had this in "original" rather than "symphony."

But another thing I expected was to see the Linux box
appear in the Maestro window. It does not, so you
know you are working when you can ping the other side.

This email is from the Win98 box thru the Linux sendmail,
so woo-hoo, It's working.

Ronen Pinchook (4Z4ZQ) <ronen@ronen.ampr.org> has
also got his working fine, and reports pretty much the same.

The spec sheet on the Symphony ISA cards is kind of weak
and the booklet lists the power as 100 mW as an aside in
the back of the book. I thought the RangeLAN2 had that
power and suspected that it was a clip-art word from that
product :-) Anyway, it is not a fast hopper, so I suspect it
would lock up pretty good at max range for that power.
So far I haven't gone much beyond the walls of my home.

My problem is, that line-of-sight is mostly a dream, the
highest elevation in OKC is the city dump, but beyond
that, it's pretty flat :-)

73,

Steve, N5OWK
Oklahoma City

-----Original Message-----
From: Jeff King <jeff@aerodata.net>
To: ssampson@usa-site.net <ssampson@usa-site.net>
Date: Wednesday, February 17, 1999 1:48 PM
Subject: re: Linux Symphony

[edited]

I had a question. You indicated on your posting
of 2/6/99 that you had not gotten WIN98 and
Linux to work together.

[snip]

BTW, the folks at Proxim have told me they have
gotten 1000feet out of the Symphony with clear
line of sight, although they do not publish
that. Have you had any luck getting greater
ranges then what they advertise?

Thanks

-Jeff King wb8wka

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To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

80. [ss] Re: Linux Symphony

From: Mike@Dent.Org
Date: Wed, 17 Feb 1999 23:15:44 +0000
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-6073-1999.02.17-17.19.27--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

> Hello Jeff,
>
> Yep, yer right, I finally got the sucker going. I had
> several emails with Dave, and we tried everything. I
> finally downloaded new drivers and removed and
> installed them again.
>
[stuff deleted]

Hi folks, can somebody confirm the cost of the syphony ISA cards in the US
please?
We where told by the UK distributors that we could buy these cards here for
350 pounds UK, I guess thats about $500US!

Thanks
Mike

>
> 73,
>
> Steve, N5OWK
> Oklahoma City
>
> -----Original Message-----
> From: Jeff King <jeff@aerodata.net>
> To: ssampson@usa-site.net <ssampson@usa-site.net>
> Date: Wednesday, February 17, 1999 1:48 PM
> Subject: re: Linux Symphony
>
>
> [edited]

>
>
> ---
> You are currently subscribed to ss as: MIKE@LURPAC.LANCS.AC.UK
> To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

--
"I remember when NOS was NET and all you got was "Welcome to TTY-link.." "
 Mike Dent. G6PHF. Morecambe, Lancs. UK. | Mike@Dent.Org
 AMPRnet=g6phf@gb7mbb.ampr.org | http://www.lancs.ac.uk/staff/dentm/
 PGP Fingerprint=44 F5 22 C4 CB A2 3F 9F 73 9C 02 9F 0B 16 55 72

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To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

81. [ss] Re: Linux Symphony

From: "Bret Berger" <bret@stoneflytech.com>
Date: Wed, 17 Feb 1999 16:23:12 -0700
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-6074-1999.02.17-17.24.07--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

They can be purchased on-line (just in the US?)

http://www.proxim.com/symphony/products/

shows $149 for the ISA card.

-bret

-----Original Message-----
From: Mike@Dent.Org <Mike@Dent.Org>
To: TAPR Spread Spectrum Special Interest Group <ss@lists.tapr.org>
Date: Wednesday, February 17, 1999 4:19 PM

Subject: [ss] Re: Linux Symphony

>> Hello Jeff,
>>
>> Yep, yer right, I finally got the sucker going. I had
>> several emails with Dave, and we tried everything. I
>> finally downloaded new drivers and removed and
>> installed them again.
>>
>[stuff deleted]
>
>Hi folks, can somebody confirm the cost of the syphony ISA cards in the US
>please?
>We where told by the UK distributors that we could buy these cards here for
>350 pounds UK, I guess thats about $500US!
>
>Thanks
>Mike
>
>>
>> 73,
>>
>> Steve, N5OWK
>> Oklahoma City
>>
>> -----Original Message-----
>> From: Jeff King <jeff@aerodata.net>
>> To: ssampson@usa-site.net <ssampson@usa-site.net>
>> Date: Wednesday, February 17, 1999 1:48 PM
>> Subject: re: Linux Symphony
>>
>>
>> [edited]
>
>>
>>
>> ---
>> You are currently subscribed to ss as: MIKE@LURPAC.LANCS.AC.UK
>> To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org
>
>--
>"I remember when NOS was NET and all you got was "Welcome to TTY-link.." "
> Mike Dent. G6PHF. Morecambe, Lancs. UK. | Mike@Dent.Org
> AMPRnet=g6phf@gb7mbb.ampr.org | http://www.lancs.ac.uk/staff/dentm/
> PGP Fingerprint=44 F5 22 C4 CB A2 3F 9F 73 9C 02 9F 0B 16 55 72
>
>
>
>
>
>---
>You are currently subscribed to ss as: BRET@INFOWEST.COM
>To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org
>
>

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

82. [ss] Re: Linux Symphony

From: Mike@Dent.Org
Date: Wed, 17 Feb 1999 23:55:08 +0000
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-6080-1999.02.17-17.56.39--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

> They can be purchased on-line (just in the US?)
>
> http://www.proxim.com/symphony/products/
>
> shows $149 for the ISA card.

Cor, thats ridiculous! Thats approx 100UKP and the UK sellers want 350UKP for
one in the UK! Thats typical of the huge profit margins UK companys expect
when selling mainly US goods over here.
Mike

>
> -bret
>
> -----Original Message-----
> From: Mike@Dent.Org <Mike@Dent.Org>
> To: TAPR Spread Spectrum Special Interest Group <ss@lists.tapr.org>
> Date: Wednesday, February 17, 1999 4:19 PM
> Subject: [ss] Re: Linux Symphony
>
>
> >> Hello Jeff,
> >>
> >> Yep, yer right, I finally got the sucker going. I had
> >> several emails with Dave, and we tried everything. I
> >> finally downloaded new drivers and removed and
> >> installed them again.
> >>
> >[stuff deleted]
> >
> >Hi folks, can somebody confirm the cost of the syphony ISA cards in the US
> >please?
> >We where told by the UK distributors that we could buy these cards here for
> >350 pounds UK, I guess thats about $500US!
> >
> >Thanks
> >Mike
> >
> >>
> >> 73,
> >>
> >> Steve, N5OWK
> >> Oklahoma City
> >>
> >> -----Original Message-----
> >> From: Jeff King <jeff@aerodata.net>
> >> To: ssampson@usa-site.net <ssampson@usa-site.net>
> >> Date: Wednesday, February 17, 1999 1:48 PM
> >> Subject: re: Linux Symphony
> >>
> >>
> >> [edited]
> >
> >>
> >>
> >> ---
> >> You are currently subscribed to ss as: MIKE@LURPAC.LANCS.AC.UK
> >> To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org
> >
> >--
> >"I remember when NOS was NET and all you got was "Welcome to TTY-link.." "
> > Mike Dent. G6PHF. Morecambe, Lancs. UK. | Mike@Dent.Org
> > AMPRnet=g6phf@gb7mbb.ampr.org | http://www.lancs.ac.uk/staff/dentm/
> > PGP Fingerprint=44 F5 22 C4 CB A2 3F 9F 73 9C 02 9F 0B 16 55 72
> >
> >
> >
> >
> >
> >---
> >You are currently subscribed to ss as: BRET@INFOWEST.COM
> >To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org
> >
> >
>
>
> ---
> You are currently subscribed to ss as: MIKE@LURPAC.LANCS.AC.UK
> To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

--
"I remember when NOS was NET and all you got was "Welcome to TTY-link.." "
 Mike Dent. G6PHF. Morecambe, Lancs. UK. | Mike@Dent.Org
 AMPRnet=g6phf@gb7mbb.ampr.org | http://www.lancs.ac.uk/staff/dentm/
 PGP Fingerprint=44 F5 22 C4 CB A2 3F 9F 73 9C 02 9F 0B 16 55 72

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To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

83. [ss] Re: addressing discussion

From: dwayne <ddraig@pobox.com>
Date: Thu, 18 Feb 1999 16:20:20 +1100
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-6148-1999.02.17-23.21.45--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Jon Roland wrote:

> The reactivation of the list apparently began with my posting of my WIPNet
> proposal, which was about digital communications.

Well, there was a bit of discussion before that, but this has provoked a lot of
people to speak up.
I suspect this was mainly due to your claim of $200 transmission devices, and not
the inherent attractiveness of your plan (I don't care, personally, I live in
Australia).

Dwayne
--
mailto:ddraig@pobox.com   http://i.am/dwayne

....return....to....the....source....

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

84. [ss] Re: addressing discussion

From: dwayne <ddraig@pobox.com>
Date: Thu, 18 Feb 1999 16:24:04 +1100
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-6149-1999.02.17-23.25.32--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Steve Bragg wrote:

> Jon Roland wrote:
>
> ><snip> SS transceivers are beyond the capability of amateurs to manufacture.
>
> Whoa! Nosirreee, bob! I have built an entire DS transmitter using
> nothing but a PIC microprocessor and a couple of transistors. I've
> prototyped FH transceivers using PICs, too.

Oh? Interested in sharing the plans? I badly need advice, due mainly to my total
lack of knowledge in this area :-)

> I thought my spread-spectrum experiments were of a rudimentary nature
> compared to what's being done by others. If there's nothing else to
> talk about, though, maybe we should go through some of the
> spread-spectrum hardware some of us have built.

Well, yes, please, I'd rather talk about that than just about anything else, and
it's the reason I subscribed to this list: to find out how to build my own ss
system so I can set up a working mesh network across Melbourne with my friends.

Dwayne
--
mailto:ddraig@pobox.com   http://i.am/dwayne

....return....to....the....source....

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

85. [ss] PIC chip SS & UWB

From: Tim Vaughan <tv@juno.com>
Date: Wed, 17 Feb 1999 21:42:29 -0800
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Cc: steveb@skymaster.c2-tech.com
Message-ID: <LYR6751-6150-1999.02.17-23.53.56--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Hi Steve,

Please could you tell more about your simple spread spectrum experiments
with PIC
chips ? I have been frustrated by the lack of simple projects that did
not use
exotic surface mount chips. PIC chips are easy to learn and fun to play
with.

How can an amateur find more information to try experiments with
ultra wide band (UWB) digital radio. Seems like this could potentially
be
the simplest type of spread spectrum of all. Seems to have fantastic
potential.
Might even beat out standard spread spectrum.

How about a PIC chip UWB transceiver ?

Tim Vaughan
WA6KJL
(tv@juno.com)

On Wed, 17 Feb 1999 12:59:26 -0600 Steve Bragg
<steveb@skymaster.c2-tech.com> writes:
>Jon Roland wrote:
>
>><snip> SS transceivers are beyond the capability of amateurs to
>manufacture.
>
>Whoa! Nosirreee, bob! I have built an entire DS transmitter using
>nothing but a PIC microprocessor and a couple of transistors. I've
>prototyped FH transceivers using PICs, too.
>
>Out of scope for amateurs? May it never be! Have you forgotten, sir,
>that amateur radio operators CONCEIEVED and PIONEERED spread-spectrum
>radio! Many involved in its development were working for their
>goverment-contractor employers, granted, but they were ham operators
>nontheless. The pioneering article, "Poisson, Shannon and the Radio
>Amateur" appeared not in some thick-bearded engineering journal, but
>in
>our own QST!
>
>What about the TAPR efforts to put usable SS hardware out there?
>Well,
>OK, so commercial hardware is a bit more polished... But that doesn't
>mean amateurs can't do it.
>
>I thought my spread-spectrum experiments were of a rudimentary nature
>compared to what's being done by others. If there's nothing else to
>talk about, though, maybe we should go through some of the
>spread-spectrum hardware some of us have built.
>
>Boy, am I gonna get flamed. Ah well. Something to talk about ;-)
>
>Steve KA9MVA
>
>--
>Steve Bragg KA9MVA
>Project Engineer
>C2 Technologies, Inc.
>100 Reunion Center, on Main Mall
>9 East 4th
>Tulsa, Oklahoma 74103
>ICQ:29816109
>

_____
You don't need to buy Internet access to use free Internet e-mail.
Get completely free e-mail from Juno at http://www.juno.com/getjuno.html
or call Juno at (800) 654-JUNO [654-5866]

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

86. [ss] Re: Standardized Addressing

From: Brett Glass <brett@lariat.org>
Date: Wed, 17 Feb 1999 18:23:51 -0700
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Cc: cornwaab@ednet.ns.ca
Message-ID: <LYR6751-6152-1999.02.18-00.00.03--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Fixing addresses is a bad idea. The ideal solution is
probably a new three-letter top level domain, plus
dynamic DNS. How about establishing a TLD consisting
of names such as CALLSIGN.ham?

--Brett

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

87. [ss] Re: Linux Symphony

From: "Plamen" <manager@com-it.net>
Date: Thu, 18 Feb 1999 11:52:36 -0700
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-6181-1999.02.18-04.56.24--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

>> http://www.proxim.com/symphony/products/
>>
>> shows $149 for the ISA card.

www.shopper.com shows lowest price at about $120 and yes, some merchants
will send it over to Europe. The problem is you must buy american style
cables and connectors because Symphony cards come only in american version
(-5 suffix).

Plamen.

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

88. [ss] Re: Linux Symphony

From: Dirk Koopman <djk@tobit.co.uk>
Date: Thu, 18 Feb 1999 11:27:08 -0000 (GMT)
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-6184-1999.02.18-05.28.16--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

On 17-Feb-99 Steve Sampson wrote:
> The spec sheet on the Symphony ISA cards is kind of weak
> and the booklet lists the power as 100 mW as an aside in
> the back of the book. I thought the RangeLAN2 had that
> power and suspected that it was a clip-art word from that
> product :-) Anyway, it is not a fast hopper, so I suspect it
> would lock up pretty good at max range for that power.
> So far I haven't gone much beyond the walls of my home.

Why would a 'slow' hopper 'lock up' at max range? Is this something to do
with hopping as such or merely retrying out because of low BER?

Dirk-Jan Koopman, Tobit Computer Co Ltd
At the source of every error which is blamed on the computer you will find
at least two human errors, including the error of blaming it on the computer.

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

89. [ss] Re: Linux Symphony

From: Steve Sampson <ssampson@usa-site.net>
Date: Thu, 18 Feb 1999 06:41:55 -0600 (CST)
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-6192-1999.02.18-06.43.01--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

> Why would a 'slow' hopper 'lock up' at max range? Is this something to do
> with hopping as such or merely retrying out because of low BER?

Well, in my simple mind, a fast hopper (down in the grass level of noise)
would miss more synchronization steps and quickly fall out of sync.

Steve

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

90. [ss] Re: PIC chip SS & UWB

From: "Greg Jones, WD5IVD" <wd5ivd@tapr.org>
Date: Thu, 18 Feb 1999 08:20:37 -0600
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-6215-1999.02.18-08.26.31--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Just in case the group hasn't heard yet, TAPR is now hosting a PIC SIG for
the discussion of PIC related projects and development.

http://www.tapr.org/cgi-bin/lyris.pl?site=tapr&enter=picsig

Cheers - Greg

>Hi Steve,
>
>Please could you tell more about your simple spread spectrum experiments
>with PIC
>chips ?   I have been frustrated by the lack of simple projects that did
>not use
>exotic surface mount chips. PIC chips are easy to learn and fun to play
>with.
>

Greg Jones, WD5IVD   Austin, Texas
wd5ivd@tapr.org   http://www.tapr.org/~wd5ivd

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

91. [ss] Whacky SS Experiments

From: Steve Bragg <steveb@skymaster.c2-tech.com>
Date: Thu, 18 Feb 1999 10:47:21 -0600
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-6249-1999.02.18-10.51.09--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Robert_Manzanares@racalcomm.com wrote:
>   If there's nothing else to talk about, though, maybe we should go
> through some of the spread-spectrum hardware some of us have built.
>
>   Saaaaaaaaaaaaay, that might not be a bad idea. It just might be
> the spark some of us need to experiment :o) Other than ARRL book, I don't
> have any other reference for practical knowledge. I've been thinking about
> trying some of the DS stuff, but I can't find my "round tuit."
>
>   So, who's built what? Parts lists, schematics, and photo's if
> possible would be great.
>

Well, I've just been deluged with replies to my earlier message, asking
for me to publish/post stuff about my spread experiments with the PIC.

I'm right now working on putting them on the Web, including the PIC
source code.

Now, remember, guys, this isn't exactly scholarly research. This is
just a whacky experiment that I cooked up. I wanted to see if I could

do 1 megachip-per-sec, burst-mode, DS spread in a 4 MHz PIC. I did it,
then set it aside and started working on other things.

So, this is going to be a little rough around the edges...probably not
up the the awesome standards of those who are working the spread STA's.

I have to draw some schematics, and format/comment the source code. I
should have it up by Friday. It's be linked from
http://www.c2-tech.com/~steveb/ka9mva

I'd like to encourage others to put their "whacky SS experiments" on the
Web, too. Even if these aren't fully-cleaned-up, commercial-quality
units, it's important for others to see your results.

73,

Steve KA9MVA

--
Steve Bragg KA9MVA
Project Engineer
C2 Technologies, Inc.
100 Reunion Center, on Main Mall
9 East 4th
Tulsa, Oklahoma 74103
ICQ:29816109

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

92. [ss] Re: Standardized Addressing

From: "Mitchell, Ed" <Ed.Mitchell@West.Boeing.com>
Date: Thu, 18 Feb 1999 08:09:02 -0800
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-6240-1999.02.18-10.10.05--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

This is an excellent idea.

> -----Original Message-----
> From: Brett Glass [SMTP:brett@lariat.org]
> Sent: Wednesday, February 17, 1999 5:24 PM
> To: TAPR Spread Spectrum Special Interest Group
> Cc: cornwaab@ednet.ns.ca
> Subject: [ss] Re: Standardized Addressing
>
> Fixing addresses is a bad idea. The ideal solution is
> probably a new three-letter top level domain, plus
> dynamic DNS. How about establishing a TLD consisting
> of names such as CALLSIGN.ham?
>
> --Brett
>
> ---
> You are currently subscribed to ss as: ED.MITCHELL@BOEING.COM
> To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

---
You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

93. [ss] PIC Spread Transmitter Page

From: Steve Bragg <steveb@skymaster.c2-tech.com>
Date: Thu, 18 Feb 1999 14:55:27 -0600
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-6280-1999.02.18-15.02.50--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

SS'ers,

Well, here it is, such that it is. The PIC DS spread spectrum
transmitter.

http://www.c2-tech.com/~steveb/ka9mva/spread.htm

Have fun.

73,

Steve KA9MVA
--
Steve Bragg KA9MVA
Project Engineer
C2 Technologies, Inc.
100 Reunion Center, on Main Mall
9 East 4th
Tulsa, Oklahoma 74103
ICQ:29816109

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

94. [ss] Re: Standardized Addressing

From: "Cureton David (NTC/MPD)" <david.cureton@ntc.nokia.com>
Date: Fri, 19 Feb 1999 01:02:00 +0200
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-6327-1999.02.18-17.32.22--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

How would dynamic DNS affect a group of nodes that become isolated from any
DNS server due to one particular link going down. Could they still
comunicate between themselves?

 - David

From: Mitchell, Ed
To: TAPR Spread Spectrum Special Interest Group
Subject: [ss] Re: Standardized Addressing
Date: Thursday, 18 February, 1999 6:09PM

This is an excellent idea.

> -----Original Message-----
> From: Brett Glass [SMTP:brett@lariat.org]
> Sent: Wednesday, February 17, 1999 5:24 PM
> To: TAPR Spread Spectrum Special Interest Group
> Cc: cornwaab@ednet.ns.ca
> Subject: [ss] Re: Standardized Addressing
>
> Fixing addresses is a bad idea. The ideal solution is
> probably a new three-letter top level domain, plus
> dynamic DNS. How about establishing a TLD consisting
> of names such as CALLSIGN.ham?
>
> --Brett
>
> ---
> You are currently subscribed to ss as: ED.MITCHELL@BOEING.COM
> To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

 ---
You are currently subscribed to ss as: CURETON@TRSMPD01ME.NTC.NOKIA.COM
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

---
You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

95. [ss] Re: Standardized Addressing

From: Brett Glass <brett@lariat.org>
Date: Thu, 18 Feb 1999 19:34:48 -0700
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-6445-1999.02.19-01.21.55--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

At 01:02 AM 2/19/99 +0200, Cureton David (NTC/MPD) wrote:

>How would dynamic DNS affect a group of nodes that become isolated from any
>DNS server due to one particular link going down. Could they still
>comunicate between themselves?

Even wired nodes lose DNS if their connection to the domain name server
is cut off. There should be a domain name server, with cache, within the
cluster -- at a node that doesn't roam. It's easy and essentially free.

--Brett

"When you discover you are riding a dead horse, the best strategy
is to dismount. But lawyers have other strategies, including buying
a stronger whip, changing riders ... declaring that the horse is
better, faster and cheaper dead, and, finally, harnessing several
dead horses together for increased speed."

Judge Thomas Penfield Jackson, quoted in The Wall Street Journal

---
You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

96. [ss] ICOM America, Inc. - PC-card

From: John Stannard - KL7JL <stannard@alaska.net>
Date: Fri, 19 Feb 1999 02:24:26 -0800
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-6461-1999.02.19-05.26.14--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

This might interest some folk...didn't see a price.

73, John

http://www.icomamerica.com/frontiers/
[Attachment: vcard.vcf; text/x-vcard; 255 bytes]

97. [ss] Re: ICOM America, Inc. - PC-card

From: Brett Glass <brett@lariat.org>
Date: Fri, 19 Feb 1999 05:41:14 -0700
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-6477-1999.02.19-06.42.27--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I believe that this is just yet another manufacturer who resells the Harris
card.

--Brett Glass

"When you discover you are riding a dead horse, the best strategy
is to dismount. But lawyers have other strategies, including buying
a stronger whip, changing riders ... declaring that the horse is
better, faster and cheaper dead, and, finally, harnessing several
dead horses together for increased speed."

Judge Thomas Penfield Jackson, quoted in The Wall Street Journal

---
You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

98. [ss] RE: PIC Spread Transmitter Page

From: "Bob Hansen" <bhansen@stny.lrun.com>
Date: Sun, 21 Feb 1999 18:36:58 -0500
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-7031-1999.02.21-17.38.19--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Thanks for sharing your work Steve.

I calculated an encoding rate of 3937 rather than 3890 bps.
(1M / 254 = 3937)
(1M / 257 = 3891)
Did I do that right, or am I misunderstanding something?

Quoted from the web page:
=* Manchester encoding in software, at a rate of 3.89k bits per second
=   (1/254th of the chip rate). Data rate is half that.

-Bob, N2GDE

> Well, here it is, such that it is. The PIC DS spread spectrum
> transmitter.
>
> http://www.c2-tech.com/~steveb/ka9mva/spread.htm
>
> Have fun.

>
> 73,
>
> Steve KA9MVA

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

99. [ss] Re: PIC Spread Transmitter Page

From: Luis Yanes <melus@bart.us.es>
Date: Tue, 23 Feb 1999 14:16:51 +0100
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-7414-1999.02.23-15.08.31--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Steve Bragg wrote:
>
> SS'ers,
>
> Well, here it is, such that it is. The PIC DS spread spectrum
> transmitter.
>
> http://www.c2-tech.com/~steveb/ka9mva/spread.htm
>
> Have fun.

Hi Steve. I've seen your PIC implementation of the DSSS.

In a fast reading of the pic code I notice you only use
these 'wide places' to do 'other things'.

But since the bsf and bcf instructions don't modify any
status bit or anything but the register affected, really
you could use any consecutive 1's or 0's, even being only
two, to execute other code.

An easy way to see this will be to substitute any repeated
1 or 0 in the sequence of bsf/bcf with a nop.

About 62 total I counted. Isn't it?

Certainly the resulting code will be a mess, with the
PRBS code interlaced with the other code, but only an
aesthetic issue.

73's de Luis

mail: melus@esi.us.es
Ampr: eb7gwl.ampr.org [44.133.41.18]
AX25: (sorry shut down)
http://www.esi.us.es/~melus/

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

100. [ss] ask for information

From: "mohamed el sheikh" <mel_sheikh@hotmail.com>
Date: Sun, 28 Feb 1999 12:05:57 PST
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-8189-1999.02.28-14.07.30--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I would like to know if it is possible to supply me with an information
on the IS-95 system standards for DS-SS CDMA technique and any
additional information I can have.
                                                Thanks,

_____
Get Your Private, Free Email at http://www.hotmail.com

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

101. [ss] Testimony of Jon Roland before the Oversight Hearing on Y2K Preparedness of the California Legi

From: Jon Roland <jon.roland@constitution.org>
Date: Sun, 28 Feb 1999 12:17:04 -0800
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-8193-1999.02.28-14.23.53--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

On Wednesday, Feb. 24, 1999, I testified before the joint Oversight Hearing on
Year 2000 Preparedness of the California Legislature on the Y2K problem. Part
of my testimony was about my WIPnet proposal and argument relating it to the
Y2K problem. Anyone wishing to read this testimony can find it at
http://www.constitution.org/y2k/test_ca_990224.htm

--Jon

==
Constitution Society, 1731 Howe Av #370, Sacramento, CA 95825
916/568-1022, 916/450-7941VM   Date: 02/28/99 Time: 12:17:05
http://www.constitution.org/   mailto:jon.roland@constitution.org
==

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

March 1999

Original source file: ss.9903
Source: http://ftp.tapr.org/tapr_history/SIG_Archives/spread-spectrum-sig/mail_archive/ss.9903

1. [ss] Re: ask for information

From: "Robert Mccabe" <rmccabe@sprintmail.com>
Date: Mon, 1 Mar 1999 00:47:30 -0600
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-8283-1999.03.01-00.49.48--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

You can order the standards from ANSI-American National Standards Institute
located in New York City. Contact them for a catalog. Howeve,r they are
not cheap!
W8JWK

-----Original Message-----
From: mohamed el sheikh <mel_sheikh@hotmail.com>
To: TAPR Spread Spectrum Special Interest Group <ss@lists.tapr.org>
Date: Sunday, February 28, 1999 2:06 PM
Subject: [ss] ask for information

>I would like to know if it is possible to supply me with an information
>on the IS-95 system standards for DS-SS CDMA technique and any
>additional information I can have.
>   Thanks,
>
>____
>Get Your Private, Free Email at http://www.hotmail.com
>
>---
>You are currently subscribed to ss as: RMCCABE@SPRINTMAIL.COM
>To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org
>
>

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

2. [ss] RE: PIC Spread Transmitter Page

From: Steve Bragg <steveb@skymaster.c2-tech.com>
Date: Mon, 01 Mar 1999 12:27:34 -0600
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-8342-1999.03.01-12.28.33--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Hi Bob,

Thanks for the correction. I mispunched the calculator :->

Steve

Bob Hansen wrote:
>
> Thanks for sharing your work Steve.
>
> I calculated an encoding rate of 3937 rather than 3890 bps.
> (1M / 254 = 3937)
> (1M / 257 = 3891)
> Did I do that right, or am I misunderstanding something?
>
> Quoted from the web page:
> =* Manchester encoding in software, at a rate of 3.89k bits per second
> =   (1/254th of the chip rate). Data rate is half that.
>
> -Bob, N2GDE
>
>
> > Well, here it is, such that it is. The PIC DS spread spectrum
> > transmitter.
> >
> > http://www.c2-tech.com/~steveb/ka9mva/spread.htm
> >

> > Have fun.
> >
> > 73,
> >
> > Steve KA9MVA
>
> ---
> You are currently subscribed to ss as: STEVEB@SKYMASTER.C2-TECH.COM
> To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

--
Steve Bragg KA9MVA
Project Engineer
C2 Technologies, Inc.
100 Reunion Center, on Main Mall
9 East 4th
Tulsa, Oklahoma 74103
ICQ:29816109
(918) 809-8388 cell
(918) 582-3635 office
(918) 582-3639 fax

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

3. [ss] Symphony for amatuer use ?

From: Tim Vaughan <tv@juno.com>
Date: Mon, 1 Mar 1999 20:01:22 -0800
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-8460-1999.03.01-22.26.20--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Has anyone here tried the Proxim symphony with an external directional
gain antenna such as a dish or helical array ?

Seems like with 100 mW it should be possible to cover 10 miles or better
with a directional antenna on both ends.

At $399 for the Ethernet bridge and $149 for the ISA unit it might be the
best deal going for hams.

Tim

(tv@juno.com)

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

4. [ss] Symphony Cordless Ethernet Bridge is Now Available!

From: Steve Stroh <steve@strohpub.com>
Date: Tue, 02 Mar 1999 07:33:52 -0800
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-8503-1999.03.02-09.38.15--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

This graced my mailbox today. Of all the currently shipping home wireless
solutions, I like Symphony the best. I think this product is a particularly
elegant one and will become REAL popular quickly. I checked
http://www.shopping.com for a real world price, and it wasn't yet listed.

Steve

Proxim is pleased to announce the availability of the Symphony Cordless
Ethernet Bridge through our on-line store at
http://symphony.productorder.com . The Symphony Cordless Ethernet Bridge
creates a wireless connection between ISDN routers, xDSL modems, and Cable
modems and Symphony-enabled PCs. The Ethernet Bridge can also be
connected to a wired Ethernet hub to extend a wired network to
Symphony-enabled PCs. The Symphony Cordless Ethernet Bridge has a list
price of $399.

Symphony Cordless Networking products allow you to quickly set up a fast,
easy-to-use, wirefree network for all your desktop and laptop
computers in order to share files, printers and other peripherals. And even
better, Symphony networking lets all of your computers share the Internet
simultaneously from anywhere around your home or small office. Now

there's no need to buy additional printers or add another phone line and
ISP account.

Symphony Product Line

Cordless ISA Card - for desktop PCs

Cordless PC Card - for notebook PCs

Cordless Modem - stand-alone 56K V.90 modem for dial-up phone access for
all Symphony-enabled computers.

Cordless Ethernet Bridge - wireless connectivity to high-speed Internet
access devices like ISDN, xDSL, and Cables modem.

Symphony products are currently available for shipment to US addresses
only. For automatic notification of availability outside the US, please
sign up on our web site at:
http://symphony.productorder.com/cgi-bin/sgdynamo.exe?HTNAME=wwavail.htm

Come by and visit our store!

****

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the message. E-mail "webmaster@proxim.com" if you have general questions.

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5. [ss] Cheap 801.11 PC Card

From: Steve Stroh <steve@strohpub.com>
Date: Wed, 10 Mar 1999 06:31:42 -0800
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-10016-1999.03.10-08.48.00--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

URL for press release is http://www.webgear.com/pubrel/press14.html.

Strangely, the Webgear web page doesn't mention this product in their
products list.

Also, no Linux support mentioned :-(

Steve

----- begin press release -----

Contacts:

Chris McKie
McKie-Headstrom PR
(408) 942-0633
chris_mckie@mhpr.com

Dave Appleman
WebGear, Inc.
(408) 271-9888 Ext. 110
dave.appleman@webgear.com

For Immediate Release

WebGear Launches Aviator Pro - Redefines the Wireless Networking Market

AviatorPRO(TM) Utilizes 2.4GHz Technology to Offer Unparalleled Wireless
Connectivity at $125 per PC

SAN JOSE, Calif., Feb. 23 /PRNewswire/ -- WebGear, the first company to
deliver home wireless networking solutions today announced the launch of
the WebGear AviatorPRO(TM), a corporate enterprise-class wireless local
area networking solution that offers high-performance capabilities at a
price point that is attractive to even the most discriminating home or
small-office PC buyer.

The WebGear AviatorPRO is an IEEE 802.11 compliant PCMCIA card wireless LAN solution that utilizes 2.4GHz frequency hopping, spread-spectrum technology to achieve a raw data rate of 2Mbps. Coupled with advanced compression algorithms, the AviatorPRO can deliver, depending on network configurations and file types, substantially greater data transfer rates, thus positioning the AviatorPRO as a cost-effective and highly flexible alternative to traditional tethered PC networks.

"Wireless networking for everyone -- that is the WebGear vision and promise to both consumers and corporate markets," said Jerry Burns, president of WebGear. "The launch of this product, the AviatorPRO, redefines the wireless LAN market today. With more than 2Mbps data rate speeds and at $125 per PC, the AviatorPRO can compete head-to-head on a total cost of ownership comparison to any typical 10base-T wired or other wireless networks."

Designed as a one-piece PCMCIA type II card, the AviatorPRO is a low-power consumption, plug-n-play, hot-swap PC Card module that allows a single user to seamlessly interchange the AviatorPRO between a notebook or desktop PC. To do this, WebGear provides an ISA-bus PCMCIA adapter card that plugs into most desktop or minitower PCs. With this modular design, WebGear is able to produce the AviatorPRO at a remarkable price point of $125 per PC, as well as allow for greater flexibility for network administrators to set-up, manage and deploy IT resources.

Leading the industry drive for wireless standards, WebGear designed the AviatorPRO to be IEEE 802.11 compliant. This critical feature ensures that the AviatorPRO will work with other 802.11 FHSS wireless solutions, thus saving IT professionals the costly mistake of buying into a proprietary wireless solution.

With the AviatorPRO, peer-to-peer and client/server networks can be easily created. The AviatorPRO supports Windows 95/98, Windows NT and includes standard NOS drivers for other network operating systems, such as Novell NetWare and Artisoft LANtastic. User authentication, hardware scrambling and software encryption help protect wireless data security. The AviatorPRO also features error-correction capabilities to ensure a high degree of data integrity.

In a typical home or office environment, the AviatorPRO achieves a transmission range of approximately 500 feet, which includes transmission through walls, ceilings and floors. In an open-air office environment, such as those populated by office cubicles or in a warehouse, the AviatorPRO can reach up to 1,000 feet.

For greater networking flexibility in larger corporate or warehouse environments where mobility is essential, WebGear provides an Access Point to accompany the AviatorPRO solution. While using an AviatorPRO PC Card, the Access Point acts as a network bridge, which provides direct, transparent access to any existing wired Ethernet LAN infrastructure. Additionally, the Access Point allows mobile users to seamlessly maintain live network connectivity while moving from one Access Point area to another.

Optimized for wire-to-wireless data transfer, the Access Point is ideal for mobile users in a corporate campus, difficult-to-wire buildings, or temporary work groups that need to remain connected to a corporate network. Also, the Access Point when properly positioned can further extend the range of an AviatorPRO wireless network to up to 2,000 feet.

The Access Point allows for SNMP management and includes integrated 10Base-T Ethernet compatibility. One AccessPoint supports up to 61 active users, and also uses user authentication, password protection and hardware scrambling to protect data and network resources.

Pricing & Availability
The AviatorPRO wireless LAN kit includes: two network PC Card AviatorPRO modules for an estimated street price of $249. An ISA Card adapter and one AviatorPRO module can also be purchased for $249. Single AviatorPRO wireless PC Card modules is also available for $124.99 each. The AviatorPRO Access Point is $499. All WebGear AviatorPRO solutions will be available in March from WebGear authorized resellers in the U.S. and Canada. Retail versions of the AviatorPRO are expected to be shipping to major PC retail outlets by April.

About WebGear, Inc.
WebGear Inc. is the pioneer of home and small office wireless local area networking solutions. Founded in 1996 and headquartered in San Jose, California, WebGear designs, manufactures and markets thin-client, wireless communications and networking solutions for homes and businesses that value

performance, quality, price and functionality.

NOTE: WebGear is a registered trademark of WebGear Incorporated. All other
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6. [ss] PCMCIA Spread Spectrum

From: "Walter Holmes" <walterh@houston-intranet.com>
Date: Sun, 14 Mar 1999 13:07:01 -0600
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-10661-1999.03.14-13.09.28--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Has anyone had any experience with the Webgear products like this link below
?

The price is definitely attractive, and about $125.00 per machine.

http://www.webgear.com/pubrel/press14.html

Thanks,
Walter
K5WH@houston-intranet.com

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7. [ss] Interesting SS component

From: Steve Stroh N8GNJ <n8gnj@tapr.org>
Date: Wed, 24 Mar 1999 06:38:28 -0800
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Cc: mangomike1@yahoo.com
Message-ID: <LYR6751-12289-1999.03.24-08.40.59--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I cleaned this up a bit from a comment left on the TAPR site. I replied to
his questions, and this is posted here with permission. I haven't heard of
this component or manufacturer so I thought it was worth a mention here.

Steve N8GNJ

>Date: Tue, 23 Mar 1999 14:39:22 -0600
>To:
>From: mangomike1@yahoo.com
>Subject: (Form) Comments from your Home Page from
>
>Name: michael D`Agostino
>Callsign: KD6VCB
>Email: mangomike1@yahoo.com
>
>Dear Sir`s,
>
>I am very interested in seeing Amateur Radio progress to more efficent modes
>/ band usage. I understand your group has many on going projects. It appears
>your group is basicaly inventing the wheel, why not utilize off the shelf
components
>to speed up the projects completion and delivery to the land mobile / portable
>industries, unless it`s cost pohibited.
>
>Example a company: http://hotell.nextel.no/granjansen/ (Gran-Jansen as.)
>located in Norway, e-mail granjan@online.no is marketting a Wirless Spread
>Spectrum Network Transceiver, GJPP 400 plug in module transceiver. FYI.
>

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8. [ss] RE: [tacgps] Re: Modified Z-Count

From: "Cureton David (NTC/MPD)" <david.cureton@ntc.nokia.com>
Date: Tue, 30 Mar 1999 03:39:00 +0300
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-13045-1999.03.29-18.45.25--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Does this mean that the source code for the FHSS radio will not be available
for others to experiment with? Not even the 360 RTOS?

Regards,
David

From: mdmiller@eaze.net
To: TAPR Special Interest Group
Subject: [tacgps] Re: Modified Z-Count
Date: Monday, 29 March, 1999 8:22AM

At 09:53 PM 3/28/99 -0500, Steve, N7HPR wrote:
>Mark, you drive a hard bargan. No, the source code is not avaiable.
>
>The kit was developed for amateurs and others to take advantage of a low
>cost DGPS Reference Station. Proceeds from the sale of the DGPS Ref Sta
>support other TAPR projects, most notibly, the FHSS Radio.

I am not looking for a bargin, but am trying to roll my own DGPS reference
station. I am new to programming and look for projects to advance my
skills. I guess I am doing what hams used to do years ago when they made
their own gear. I thought someone here might be able to help me with an
area that I didn't understand. I'll find the answer somewhere else.

73
Mark Miller
N5RFX

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9. [ss] RE: [tacgps] Re: Modified Z-Count

From: John Koster <w9ddd@tapr.org>
Date: Mon, 29 Mar 1999 19:05:43 -0600 (CST)
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Cc: tacgps@lists.tapr.org
Message-ID: <LYR6751-13049-1999.03.29-19.08.40--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I think the OS is already available (but don't ask me where). There is
a book (or two?) written by the origianl author (Comer?) of XINU that
documents it very well.

John Koster, W9DDD
<w9ddd@tapr.org>

  ==

   Those who give up freedom to attain security ultimately have neither.
 Hint - it's a small price to pay for ____ - fill in your favorite cause.

On Tue, 30 Mar 1999, Cureton David (NTC/MPD) wrote:

> Does this mean that the source code for the FHSS radio will not be available
> for others to experiment with? Not even the 360 RTOS?
>
> Regards,
> David
> ----------
> From: mdmiller@eaze.net
> To: TAPR Special Interest Group
> Subject: [tacgps] Re: Modified Z-Count
> Date: Monday, 29 March, 1999 8:22AM
>
> At 09:53 PM 3/28/99 -0500, Steve, N7HPR wrote:
> >Mark, you drive a hard bargan. No, the source code is not avaiable.

> >
> >The kit was developed for amateurs and others to take advantage of a low
> >cost DGPS Reference Station. Proceeds from the sale of the DGPS Ref Sta
> >support other TAPR projects, most notibly, the FHSS Radio.
>
> I am not looking for a bargin, but am trying to roll my own DGPS reference
> station. I am new to programming and look for projects to advance my
> skills. I guess I am doing what hams used to do years ago when they made
> their own gear. I thought someone here might be able to help me with an
> area that I didn't understand. I'll find the answer somewhere else.
>
>
> 73
> Mark Miller
> N5RFX
>
> ---
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>
> ---
> You are currently subscribed to ss as: W9DDD@TAPR.ORG
> To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org
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10. [ss] RE: [tacgps] Re: Modified Z-Count

From: "Steve Sampson" <ssampson@usa-site.net>
Date: Mon, 29 Mar 1999 19:18:25 -0600
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-13050-1999.03.29-19.21.46--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Looking at polluted 900 - 928 MHz spectrum, and the falling prices
for products in the 2.4 GHz spectrum, I think in a couple years when
the TAPR radio is released, it will be too little, too late.

It is a technical marvel, but by making it a Part-15 device, it can't
compete in that market, where the prices will be 1/4th the cost.
The STA is bound to die even before the radio is released, as
the FCC has pretty much lost interest. Thus, unless the radio is
redesigned for a legal hopping code, it's only an experiment,
and not a marketable product. Why TAPR is making a Part-15
device instead of a Part-97 440 MHz device, would be an
interesting story. The power and range that Hams want is not
going to be satisfied at 900 MHz.

If the FCC is moving to fix Ham radio SS, it's a state secret,
because no Ham or Industry publication has mentioned the
process or progress, thus, in my mind, it is a dead issue.

>Does this mean that the source code for the FHSS radio will not be
available
>for others to experiment with? Not even the 360 RTOS?
>
>Regards,
>David

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11. [ss] RE: [tacgps] Re: Modified Z-Count

From: Jake Janovetz <janovetz@tempest.ece.uiuc.edu>
Date: Mon, 29 Mar 1999 19:42:06 -0600
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-13053-1999.03.29-19.45.48--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

This is an interesting point. So, my question is: Why doesn't
TAPR spend its time developing more low-cost modular things

that would allow hams to play? That is, design a nice, tight
CPU board with ethernet capability. Then, add a nice, tight
DSP/FPGA add-on that would allow more digital comm experimentation.
Finally, a small RF section that could be redesigned for other
bands/bandwidths/etc.

Sure, the cost of the three combined would be a bit more
(not much), but overall, the capabilities would be FAR
greater. The current DSP kit is underpowered and not
setup well for digital communications. There's way too much
out there now in coding, modulation, demod, spread spectrum,
etc. for hams not to be experimenting in these areas.
Trouble is, a nice system that allows all of this isn't there...

I'd be willing to help. Sounds like fun! Design them, build
them up, write some code, then get someone like Downeast
Microwave to get them to the people.

    Cheers,
    Jake

On Mon, Mar 29, 1999 at 07:18:25PM -0600, Steve Sampson wrote:
> Looking at polluted 900 - 928 MHz spectrum, and the falling prices
> for products in the 2.4 GHz spectrum, I think in a couple years when
> the TAPR radio is released, it will be too little, too late.
>
> It is a technical marvel, but by making it a Part-15 device, it can't
> compete in that market, where the prices will be 1/4th the cost.
> The STA is bound to die even before the radio is released, as
> the FCC has pretty much lost interest. Thus, unless the radio is
> redesigned for a legal hopping code, it's only an experiment,
> and not a marketable product. Why TAPR is making a Part-15
> device instead of a Part-97 440 MHz device, would be an
> interesting story. The power and range that Hams want is not
> going to be satisfied at 900 MHz.
>
> If the FCC is moving to fix Ham radio SS, it's a state secret,
> because no Ham or Industry publication has mentioned the
> process or progress, thus, in my mind, it is a dead issue.
>
>
> >Does this mean that the source code for the FHSS radio will not be
> available
> >for others to experiment with? Not even the 360 RTOS?
> >
> >Regards,
> >David
>
>
>
> ---
> You are currently subscribed to ss as: JANOVETZ@UIUC.EDU
> To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

--
   janovetz@uiuc.edu | Once you have flown, you will walk the earth with
 University of Illinois | your eyes turned skyward, for there you have been,
                        | there you long to return.   -- da Vinci
        PP-ASEL | http://www.ews.uiuc.edu/~janovetz/index.html

---
You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

12. [ss] RE: [tacgps] Re: Modified Z-Count

From: Howard Goldstein <n2wx@tapr.org>
Date: Mon, 29 Mar 1999 21:38:42 -0500 (EST)
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-13062-1999.03.29-20.42.11--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Jake Janovetz writes:

 > greater. The current DSP kit is underpowered and not
 > setup well for digital communications. There's way too much
 > out there now in coding, modulation, demod, spread spectrum,
 > etc. for hams not to be experimenting in these areas.
 > Trouble is, a nice system that allows all of this isn't there...

Aye, there's the rub: Someone has to come up with that nicer system in
order for TAPR to produce it. Could that someone be you?

TAPR's foremost strengths are in bringing resources to bear on volunteer
projects and helping disseminate them when they've matured.

I'm not sure how TAPR could direct development more aggressively than
it does now (by suggesting new and interesting projects for its
volunteers). Ordering the volunteers about to do uninteresting things
is sure to be counterproductive.

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13. [ss] RE: [tacgps] Re: Modified Z-Count

From: Dewayne Hendricks <dewayne@warpspeed.com>
Date: Mon, 29 Mar 1999 18:40:15 -0800
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-13064-1999.03.29-20.44.14--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

At 19:18 -0600 3/29/99, Steve Sampson wrote:
> If the FCC is moving to fix Ham radio SS, it's a state secret,
> because no Ham or Industry publication has mentioned the
> process or progress, thus, in my mind, it is a dead issue.

        Its not a dead issue. The Wireless Telecommunications Bureau
(WTB) of the FCC has very few cycles these days for ham radio. Right
now, the big item as far as ham radio is concerned for them is
resolving the restructuring NPRM. Until the R&O comes out for that,
I doubt that you will see an R&O for SS as the resources just aren't
available.

-- Dewayne

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To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

14. [ss] RE: [tacgps] Re: Modified Z-Count

From: "Cureton David (NTC/MPD)" <david.cureton@ntc.nokia.com>
Date: Tue, 30 Mar 1999 07:16:00 +0300
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-13077-1999.03.29-22.22.05--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

This probably should be in the SS SIG but I feel I should indicate what
prompted my original question. My apologies to those who disinterested in
this thread and I would recommend that all replies be sent to the SS SIG.

An except for the FHSS Feb '98 update:

"The project team has decided to do all development around XINU, since the
full source is freely available and meets the needs of the project. As of
this writing, the software group has ported the code to the CPU board and is
currently testing and debugging."

An except for the FHSS June '98 update:

"The basic kernel is operational on the board, with the exception of the
Ethernet driver module. The serial, timer, and several other modules have
had to be rewritten from the
ground up. It is expected the the ethernet driver may take 2 months to fully
rewrite and get functional, since the manner in which the kernel handles the
buffers might have to be
optimized for our processor. As was discussed last issue, we have acquired a
copy of XINU (a preemptive multitasking, prioritized scheduler) and a
full-blown TCP/IP stack
based on the design in the books by Doug Comer. We have to change the
assembly modules, and port the code over from a SUN 3 workstation to the
68360 design. The total
RTOS/STACK design is 630 different software code modules! Once the
kernel/stack is operation, then we actually have to write the radio code.
The Software Development
Systems Inc (SDS) development tools have worked out very good. The tools

include a Crosscode complier suite and singlestep on chip debugger."

Sounds like significant work has gone into getting the XINU OS operating on
the Motorola 68360 processor. Not something the average Jo would have the
time to do!

From: Steven R. Bible
To: TAPR Special Interest Group
Subject: [tacgps] Re: Modified Z-Count
Date: Tuesday, 30 March, 1999 6:18AM

At 06:58 PM 3/29/99 -0600, you wrote:
>I would expect the authors would be given commercial rights
>to the code, so no, I doubt the Source will ever be released.
>
>>Does this mean that the source code for the FHSS radio will not be
>available
>>for others to experiment with? Not even the 360 RTOS?

My goodness, this thread is getting way off...

It is not TAPR policy to compel an author to withhold or give away the
source code to a project. Each project is treated separately on a
case-by-case basis.

In the case of the FHSS, the source code is already out there! It is XINU.
You can buy the Douglas Comer textbook today! Take a look at

    http://www.cs.purdue.edu/homes/dec/osbooks.html

 - Steve, N7HPR
  n7hpr@tapr.org
  n7hpr@amsat.org

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15. [ss] Re: [tacgps] Re: Modified Z-Count

From: "Greg Jones, WD5IVD" <wd5ivd@tapr.org>
Date: Mon, 29 Mar 1999 22:53:35 -0600
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-13085-1999.03.29-23.03.05--lyris.ss#tapr.org@lists.tapr.org>
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The FHSS radio code is all based on Xinu which is completely open source.

If you read the FHSS web page you will note that one of the most important
features of the FHSS radio is that all the code will be available from the
get go. (That isn't in the project updates, Tom talks about it in the
paper and in several of the audio talks.)

You are correct in thinking that a LOT of work has gone into the project
thus far and we still have a lot to do and we still need donations and
people joining TAPR and other people buying things in order to conitune its
developement as well as many other reallt next projects.

While the FHSS code isn't available now, because it isn't finished, but
when it is -- you guys can just beat the hell out of it all you want.

Cheers - Greg Jones, WD5IVD
President TAPR

>I would expect the authors would be given commercial rights
>to the code, so no, I doubt the Source will ever be released.
>
>>Does this mean that the source code for the FHSS radio will not be

>available
>>for others to experiment with? Not even the 360 RTOS?
>>
>>Regards,
>>David
>
>
>

Greg Jones, WD5IVD   Austin, Texas
wd5ivd@tapr.org   http://www.tapr.org/~wd5ivd

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To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

16. [ss] RE: [tacgps] Re: Modified Z-Count

From: Jake Janovetz <janovetz@tempest.ece.uiuc.edu>
Date: Tue, 30 Mar 1999 09:16:15 -0600
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-13151-1999.03.30-09.19.59--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

This should be forwarded to the porting squad.

Sometime ago, I recommended the use of RTEMS for the RTOS on
this device since it has been working on the 360 platform for
some time. You may want to download the source code for
rtems-4.0.0 from www.oarcorp.com. In the gen68360 board support
package, the ethernet driver for the 68360 is included. It
may help in the port.

All in all, I would guess it would take about 2 weeks to get
RTEMS hopping on this device. That sounds better than 2 months
to me... I'm running on a 68360 device now. Point your
web browser to dcomm0.ece.uiuc.edu (that's RTEMS).

    Cheers,
    Jake

On Tue, Mar 30, 1999 at 07:16:00AM +0300, Cureton David (NTC/MPD) wrote:
> This probably should be in the SS SIG but I feel I should indicate what
> prompted my original question. My apologies to those who disinterested in
> this thread and I would recommend that all replies be sent to the SS SIG.
>
> An except for the FHSS Feb '98 update:
>
> "The project team has decided to do all development around XINU, since the
> full source is freely available and meets the needs of the project. As of
> this writing, the software group has ported the code to the CPU board and is
> currently testing and debugging."
>
>
> An except for the FHSS June '98 update:
>
> "The basic kernel is operational on the board, with the exception of the
> Ethernet driver module. The serial, timer, and several other modules have
> had to be rewritten from the
> ground up. It is expected the the ethernet driver may take 2 months to fully
> rewrite and get functional, since the manner in which the kernel handles the
> buffers might have to be
> optimized for our processor. As was discussed last issue, we have acquired a
> copy of XINU (a preemptive multitasking, prioritized scheduler) and a
> full-blown TCP/IP stack
> based on the design in the books by Doug Comer. We have to change the
> assembly modules, and port the code over from a SUN 3 workstation to the
> 68360 design. The total
> RTOS/STACK design is 630 different software code modules! Once the
> kernel/stack is operation, then we actually have to write the radio code.
> The Software Development
> Systems Inc (SDS) development tools have worked out very good. The tools
> include a Crosscode complier suite and singlestep on chip debugger."
>
> Sounds like significant work has gone into getting the XINU OS operating on
> the Motorola 68360 processor. Not something the average Jo would have the
> time to do!

>
>
>
>
>
>
> ----------
> From: Steven R. Bible
> To: TAPR Special Interest Group
> Subject: [tacgps] Re: Modified Z-Count
> Date: Tuesday, 30 March, 1999 6:18AM
>
> At 06:58 PM 3/29/99 -0600, you wrote:
> >I would expect the authors would be given commercial rights
> >to the code, so no, I doubt the Source will ever be released.
> >
> >>Does this mean that the source code for the FHSS radio will not be
> >available
> >>for others to experiment with? Not even the 360 RTOS?
>
>
> My goodness, this thread is getting way off...
>
> It is not TAPR policy to compel an author to withhold or give away the
> source code to a project. Each project is treated separately on a
> case-by-case basis.
>
> In the case of the FHSS, the source code is already out there! It is XINU.
> You can buy the Douglas Comer textbook today! Take a look at
>
>   http://www.cs.purdue.edu/homes/dec/osbooks.html
>
>
> - Steve, N7HPR
>   n7hpr@tapr.org
>   n7hpr@amsat.org
>
>
> ---
> You are currently subscribed to tacgps as: CURETON@TRSMPD01ME.NTC.NOKIA.COM
> To unsubscribe send a blank email to leave-tacgps-5529M@lists.tapr.org
>
> ---
> You are currently subscribed to ss as: JANOVETZ@UIUC.EDU
> To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

--
   janovetz@uiuc.edu | Once you have flown, you will walk the earth with
 University of Illinois | your eyes turned skyward, for there you have been,
                        | there you long to return.   -- da Vinci
        PP-ASEL | http://www.ews.uiuc.edu/~janovetz/index.html

---
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To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

17. [ss] Re: [tacgps] RE: Modified Z-Count

From: "Greg Jones, WD5IVD" <wd5ivd@tapr.org>
Date: Tue, 30 Mar 1999 09:45:04 -0600
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-13159-1999.03.30-09.50.40--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

>At 05:18 PM 3/28/99 -0500, Steve, N7HPR wrote:
>>Not really knowing what you guys are up to, and hazarding beating a dead
>>horse...
>>
>>The TAPR DGPS Ref Station already does the things you guys mention above.
>>It takes the Motorola binary and converts it to RTCM Type 1 message.
>
>Yes Steve, I am familiar with the TAPR kit for $179.00. Does that include a
>copy of the source code for the PIC?

Hi Mark.

The code for the DGPS project is not available. Steve Bible, N7HPR, author
of the code and designer of the DGPS along with Doug McKinney, allows TAPR
to use the code in the DGPS kit that TAPR makes available. Steve hasn't
released his DGPS code because he has also been pursuing commercial avenues
with his project.

I think someone has already commented about software release for TAPR projects. They are on a case by case basis. They have to be these days. I feel very strongly that when an author or designer approaches TAPR we want to ensure that we don't limit their future commercial possibilities, but on the other hand we want to make sure that the TAPR membership can benefit and also contribute back to whatever is brought to the organization to do. The key to this is usually trying to represent the amateur radio/educational markets for the author or designer that comes to TAPR with a project for us to do.

The key issue for TAPR is one of trying to make things available to the amateur radio, educational, experimental communities. This sometimes means to do so that the code from the author remains closed until the author feel that it could be released. As with the FHSS radio project, DSP-93, and PIC-E, and several other TAPR projects the majority of the code is made available that allows the user to build their own modules or whatever from the code released.

The example that most people don't know is the TNC-2. TAPR never owned the license to the AX.25 code and interface running in the TNC-2. The author was kind enough to give TAPR a free use license since it was a joint effort to develop the hardware and software. TAPR then benefited from being able to license the executable along with the hardware when a commercial interest showed. This partnership generated whatever knows to do as packet radio. MFJ, AEA, PacComm, and many other benefited from the ability to license hardware and firmware from TAPR, but then be able to hire the author as a consultant to enhance their product. TAPR made money selling the license and making royalities (before 1989 now) and the author developed a commercial channel for his development. Also, the amateur radio community benefited.

While in a perfect world it would be great to release all code to everyone, authors have to make the decision individually if doing so risks any potential commercial profit from their hard work.

This decision has to be balanced one. By releasing into the amateur community the authors in many cases can be greatly assisted in both technical feedback and testing as well as introducing their work to a big cross section of potential customers later in a commercial venture. It is my job and others in TAPR to work with new projects when they appear and try to determine what the best approach is for getting the technology into the organization while at the same time making the author happy with future possibilities.

Anyway, I hope that this shares a little of the daily juggling I have to do at TAPR to bring interesting kits and projects to the membership and the amateur community at large.

It isn't a perfect world, so we just have to make do with what we have and enjoy what is in front of us.

Cheers - Greg Jones, WD5IVD
President TAPR

Greg Jones, WD5IVD Austin, Texas
wd5ivd@tapr.org http://www.tapr.org/~wd5ivd

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

18. [ss] Why XINU on the TAPR FHSS (was Re: tacgps thread)

From: "Greg Jones, WD5IVD" <wd5ivd@tapr.org>
Date: Tue, 30 Mar 1999 10:04:11 -0600
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-13168-1999.03.30-10.07.13--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Hi Jake.

We are aware of your project and thanks for the offer.

We hope to have the digital board (CPU) available by itself sometime in the future for members to experiment with the Xinu package and I your offer of RTEMS would also be an excellent package for the members to experiment with on the digital board.

Hopefully we get that made available when the digital board becomes available ?

As to the Xinu question. Here is the long answer that drove the selection
of what we are doing. This made a year ago and we have 8 months of
development invested, so switching now doesn't make a lot of sense. The OS
itself is not what is taking the most time. Interfaceing the RF to the
digital board, selecting hopping codes, proving the modem design, testing
the Harris chip, and other difficult design decisions and choices are the
slow boat now. Xinu at this time has been full operational on the board
since the first of the year.

Anyway -- why Xinu

1. The selected OS has to be completely license-unrestricted. XINU meets
the requirement. Later versions of XINU only restrict that we cannot
publish the source code as a book, previous ones (including the version we
started from) do not even have that restriction. This will allow us to
publish and document the source without any problems.

2. The OS has to work well and reliably. XINU has good reputation, our
ported version seems to be working very well.

3. Documentation. Since we will be opening the source to all to extend /
enhance our development, good documentation on the kernel and the stack is
very useful for helping people get up to speed. XINU is really good in
terms of documentation. There are at least two books currently in print on
it and we are expecting to publish CD that describe the entire radio and
source for developers.

The issue is not code development. The main issues in front of us deals
with the RF board and integraing the Digital and RF board together to
accomplish the mission of the project.

I am happy that there are plenty of software studs on the list waiting in
the wings to help, but at this time the software isn't the issue. When the
CPU board is made available and the information on how to access the FPGA
to control the RF section and all that other stuff is available, then I
hope we see other platforms ported to the system that give amateurs choices
in their controller options for radio usage.

Cheers - Greg Jones, WD5IVD

>This should be forwarded to the porting squad.
>
>Sometime ago, I recommended the use of RTEMS for the RTOS on
>this device since it has been working on the 360 platform for
>some time. You may want to download the source code for
>rtems-4.0.0 from www.oarcorp.com. In the gen68360 board support
>package, the ethernet driver for the 68360 is included. It
>may help in the port.
>
>All in all, I would guess it would take about 2 weeks to get
>RTEMS hopping on this device. That sounds better than 2 months
>to me... I'm running on a 68360 device now. Point your
>web browser to dcomm0.ece.uiuc.edu (that's RTEMS).
>
>   Cheers,
>   Jake
>
>

Greg Jones, WD5IVD   Austin, Texas
wd5ivd@tapr.org   http://www.tapr.org/~wd5ivd

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

19. [ss] Re: [tacgps] RE: Modified Z-Count

From: Bob Nielsen <nielsen@primenet.com>
Date: Tue, 30 Mar 1999 13:26:20 -0700 (MST)
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-13207-1999.03.30-14.28.46--lyris.ss#tapr.org@lists.tapr.org>

Rendered body type: text/plain

On Tue, 30 Mar 1999, Greg Jones, WD5IVD wrote:

> While in a perfect world it would be great to release all code to everyone,
> authors have to make the decision individually if doing so risks any
> potential commercial profit from their hard work.
>
> This decision has to be balanced one. By releasing into the amateur
> community the authors in many cases can be greatly assisted in both
> technical feedback and testing as well as introducing their work to a big
> cross section of potential customers later in a commercial venture. It is
> my job and others in TAPR to work with new projects when they appear and
> try to determine what the best approach is for getting the technology into
> the organization while at the same time making the author happy with future
> possibilities.
>

One thing that many authors don't seem to realize is that releasing source
code does not mean that the author loses the ability to gain financially
from their work. See http://www.fsf.org and http://www.opensource.org for
some strong arguments in favor (there is not a consensus on how this
should be done and currently some infighting among the adherents).

Bob

Bob Nielsen   Internet: nielsen@primenet.com
Tucson, AZ   AMPRnet: w6swe@w6swe.ampr.org
DM42nh   http://www.primenet.com/~nielsen

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20. [ss] RE: [tacgps] Re: Modified Z-Count

From: "Steve Sampson" <ssampson@usa-site.net>
Date: Wed, 31 Mar 1999 05:01:45 -0600
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-13327-1999.03.31-05.05.11--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

If you need a better Web site, I can provide you with one.

I tried the web site:

    http://www.oarcorp.com

and there is no web page there. Maybe the site crashed,
or they went out of business. I also tried the:

    http://dcomm0.ece.uiuc.edu

And it has some selections on the left, but none of them
work. Overview is a broken link, Receiver Control Panel
says:

    class RxCtrl not found

Steve, K5OKC
Oklahoma City

-----Original Message-----
From: Jake Janovetz <janovetz@tempest.ece.uiuc.edu>
To: TAPR Spread Spectrum Special Interest Group <ss@lists.tapr.org>
Date: Tuesday, March 30, 1999 9:18 AM
Subject: [ss] RE: [tacgps] Re: Modified Z-Count

>This should be forwarded to the porting squad.
>
>Sometime ago, I recommended the use of RTEMS for the RTOS on
>this device since it has been working on the 360 platform for
>some time. You may want to download the source code for
>rtems-4.0.0 from www.oarcorp.com. In the gen68360 board support
>package, the ethernet driver for the 68360 is included. It
>may help in the port.
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>All in all, I would guess it would take about 2 weeks to get

>RTEMS hopping on this device. That sounds better than 2 months
>to me... I'm running on a 68360 device now. Point your
>web browser to dcomm0.ece.uiuc.edu (that's RTEMS).
>
>   Cheers,
>   Jake

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

21. [ss] RE: [tacgps] Re: Modified Z-Count

From: Jake Janovetz <janovetz@tempest.ece.uiuc.edu>
Date: Wed, 31 Mar 1999 07:24:19 -0600
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-13337-1999.03.31-07.28.09--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Steve,

   www.oarcorp.com is down from here, as well. I'm not sure
why they are down right now. I'm sure it's only temporary.
(they haven't gone out of business yet!)

   As for dcomm0.ece.uiuc.edu, that's my experimental box.
It goes up and down during the day as I play with things.
It's content is slim (the overview is about it...) Overview
is not a broken link for me. The RxCtrl panel is certainly
a broken link (I need to place the Java there when I want to
run it -- it changes daily).

   Can you try dcomm0 again? I haven't rebooted for several
days now and it's working fine for me.

    Cheers,
    Jake

On Wed, Mar 31, 1999 at 05:01:45AM -0600, Steve Sampson wrote:
> If you need a better Web site, I can provide you with one.
>
> I tried the web site:
>
>   http://www.oarcorp.com
>
> and there is no web page there. Maybe the site crashed,
> or they went out of business. I also tried the:
>
>   http://dcomm0.ece.uiuc.edu
>
> And it has some selections on the left, but none of them
> work. Overview is a broken link, Receiver Control Panel
> says:
>
>   class RxCtrl not found
>
> Steve, K5OKC
> Oklahoma City
>
> -----Original Message-----
> From: Jake Janovetz <janovetz@tempest.ece.uiuc.edu>
> To: TAPR Spread Spectrum Special Interest Group <ss@lists.tapr.org>
> Date: Tuesday, March 30, 1999 9:18 AM
> Subject: [ss] RE: [tacgps] Re: Modified Z-Count
>
>
> >This should be forwarded to the porting squad.
> >
> >Sometime ago, I recommended the use of RTEMS for the RTOS on
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> >web browser to dcomm0.ece.uiuc.edu (that's RTEMS).
> >
> >   Cheers,
> >   Jake
>
>
>
> ---
> You are currently subscribed to ss as: JANOVETZ@UIUC.EDU
> To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

--
   janovetz@uiuc.edu | Once you have flown, you will walk the earth with
 University of Illinois | your eyes turned skyward, for there you have been,
                        | there you long to return.   -- da Vinci
        PP-ASEL | http://www.ews.uiuc.edu/~janovetz/index.html

---
You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

22. [ss] RE: [tacgps] Re: Modified Z-Count

From: Jake Janovetz <janovetz@tempest.ece.uiuc.edu>
Date: Wed, 31 Mar 1999 07:29:55 -0600
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-13338-1999.03.31-07.33.45--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Sorry, this wasn't supposed to show up here....

   Cheers,
   Jake

On Wed, Mar 31, 1999 at 07:24:19AM -0600, Jake Janovetz wrote:
> Steve,
>
>   www.oarcorp.com is down from here, as well. I'm not sure
> why they are down right now. I'm sure it's only temporary.
> (they haven't gone out of business yet!)
>
>   As for dcomm0.ece.uiuc.edu, that's my experimental box.
> It goes up and down during the day as I play with things.
> It's content is slim (the overview is about it...) Overview
> is not a broken link for me. The RxCtrl panel is certainly
> a broken link (I need to place the Java there when I want to
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>
>   Can you try dcomm0 again? I haven't rebooted for several
> days now and it's working fine for me.
>
>
>   Cheers,
>   Jake
>
>
> On Wed, Mar 31, 1999 at 05:01:45AM -0600, Steve Sampson wrote:
> > If you need a better Web site, I can provide you with one.
> >
> > I tried the web site:
> >
> >   http://www.oarcorp.com
> >
> > and there is no web page there. Maybe the site crashed,
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> >
> >   http://dcomm0.ece.uiuc.edu
> >
> > And it has some selections on the left, but none of them
> > work. Overview is a broken link, Receiver Control Panel
> > says:
> >
> >   class RxCtrl not found
> >
> > Steve, K5OKC
> > Oklahoma City
> >

> > -----Original Message-----
> > From: Jake Janovetz <janovetz@tempest.ece.uiuc.edu>
> > To: TAPR Spread Spectrum Special Interest Group <ss@lists.tapr.org>
> > Date: Tuesday, March 30, 1999 9:18 AM
> > Subject: [ss] RE: [tacgps] Re: Modified Z-Count
> >
> >
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> > >some time. You may want to download the source code for
> > >rtems-4.0.0 from www.oarcorp.com. In the gen68360 board support
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> > >web browser to dcomm0.ece.uiuc.edu (that's RTEMS).
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> > >   Cheers,
> > >   Jake
> >
> >
> >
> > ---
> > You are currently subscribed to ss as: JANOVETZ@UIUC.EDU
> > To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org
>
> --
>   janovetz@uiuc.edu | Once you have flown, you will walk the earth with
> University of Illinois | your eyes turned skyward, for there you have been,
> | there you long to return.   -- da Vinci
>   PP-ASEL | http://www.ews.uiuc.edu/~janovetz/index.html
>
> ---
> You are currently subscribed to ss as: JANOVETZ@UIUC.EDU
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--
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        PP-ASEL | http://www.ews.uiuc.edu/~janovetz/index.html

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April 1999

Original source file: ss.9904
Source: http://ftp.tapr.org/tapr_history/SIG_Archives/spread-spectrum-sig/mail_archive/ss.9904

1. [ss] Voice activated switch.. wanted please help... Need one badly!

From: "Hamoperator SM7UGT Marcel bos" <sm1ugt@hotmail.com>
Date: Mon, 05 Apr 1999 08:07:47 PDT
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Cc: sm0ugt@hotmail.com
Message-ID: <LYR6751-14151-1999.04.05-10.13.03--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

My time is short and and I need a vox. I Built one but I failed
to complete it. Something is wrong. Shall be used for a Iphone
link in stockholm, so you guys can chat with them.

I don't expect "for free" - but it allways nice with a
contrubution. The radio I plan to use is an IC04AT - then
I have an ICw2..

/Marcel, SM0UGT@hotmail.com...

-- Thanks

_____
Get Your Private, Free Email at http://www.hotmail.com

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

2. [ss] rtems / oar

From: Howard Goldstein <n2wx@tapr.org>
Date: Wed, 7 Apr 1999 07:20:07 -0400 (EDT)
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-14493-1999.04.07-06.23.35--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

some folks were hunting down oar (RTEMS) a few days ago. those so
situated will find the juicy stuff available off of

 http://lancelot.gcs.redstone.army.mil/rtems.html

...all the juicy stuff except for (from where i sit) a bit of time and
an active design spec that cries out for it.   it looks like an
awesome package.

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

3. [ss] Re: rtems / oar

From: Jake Janovetz <janovetz@tempest.ece.uiuc.edu>
Date: Wed, 7 Apr 1999 06:29:27 -0500
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-14494-1999.04.07-06.33.52--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Actually, their web site has moved recently (last 8 months or so).

http://www.oarcorp.com/

I just accessed it, so it is up and running. (It was down for a few
hours a week ago or so)

   Cheers,
   Jake

On Wed, Apr 07, 1999 at 07:20:07AM -0400, Howard Goldstein wrote:
>
> some folks were hunting down oar (RTEMS) a few days ago. those so
> situated will find the juicy stuff available off of
>
> http://lancelot.gcs.redstone.army.mil/rtems.html
>
> ...all the juicy stuff except for (from where i sit) a bit of time and

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> an active design spec that cries out for it.   it looks like an
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> To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

--
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 University of Illinois | your eyes turned skyward, for there you have been,
                        | there you long to return.     -- da Vinci
        PP-ASEL         | http://www.ews.uiuc.edu/~janovetz/index.html

---
You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org
```

4. [ss] TAPR Board of Directors Election Reminder

```
From: "Greg Jones, WD5IVD" <wd5ivd@tapr.org>
Date: Thu, 8 Apr 1999 12:30:22 -0500
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-14731-1999.04.08-12.34.50--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain
```

```
This is a reminder to all TAPR members* that the TAPR Board of Directors
Election is happening until April 15th.

The current PSR supplied the necessary information for voting
electronically or via the mail.

If you don't know the web address or have lost your voter verification
number, then please send e-mail to tapr@tapr.org or call the TAPR office
(940) 383-0000 and Dorothy can supply you with the necessary information
for voting on-line.

The following people this year are running for the TAPR board of directors.

        Steve Bible, N7HPR
        Steve Dimse, K4HG
        Bob Hansen, N2GDE
        Steve Stroh, N8GNJ

Your vote as a member is important -- be sure to vote!

Cheers - Greg Jones, WD5IVD
President, TAPR

---------
* membership current as of or before January 1, 1999 to be able to vote.
-------------------------------------------------------------------------------
Tucson Amateur Packet Radio
8987-309 E Tanque Verde Rd #337 * Tucson, Az * 85749-9399
-------------------------------------------------------------------------------
e-mail: tapr@tapr.org       web: <http://www.tapr.org/>
ftp:    ftp.tapr.org
phone:  940-383-0000        fax: 940-565-2544
-------------------------------------------------------------------------------

---
You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org
```

5. [ss] Off Topic : CDPD

```
From: "Marcelo Puhl" <mark@plug-in.com.br>
Date: Thu, 8 Apr 1999 19:22:44 -2
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-14770-1999.04.08-17.25.30--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain
```

```
Hi,

I'm doing my master degree on Wirelles Data Comm and my thesis will be
on implementing a CDPD modem.

I got the System Specification release 1.1 and I have just started to study it.

What I'm asking for are recommendations about chipsets, evaluation boards
or something like that to start my work.
```

Thanks for any info.

Marcelo Puhl - PY3SS
mark@plug-in.com.br

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

6. [ss] Questions..

From: Dirk Koopman <djk@tobit.co.uk>
Date: Mon, 12 Apr 1999 17:51:14 +0100 (BST)
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-15539-1999.04.12-12.05.18--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Bin reading the ARRL SS Book. I have a few questions that arise from it and and some more general questions which I would appreciate some help with. I would much prefer Web based references to hardcopy ones.

1. The favoured technique for syncronisation in the ARRL book seems to be to run the PLL deliberately slower or faster than the chip rate you are expecting. Would it not be better to leave the coding unit (shift register or whatever) set at some known value and then syncronise with pulses that happen when the code converges every time the m-sequence (or whatever) comes round again? (I am probably presuming DSS here).

2. In a FHSS system what method do you actually use to syncronise.

3. For these 'modern' FHSS cards that we see with > 1Mb/s transfer speeds are they 'slow' hoppers (i.e. more than one transmitted databit per hop) or 'fast' (more than one hop per bit).

4. If they are slow hoppers do they packetise the data and effectively use each hop as a slot with a packet containing data and FEC/CS.

5. Is there any research/information on using FEC techniques within the spreading sequence itself so that it isn't necessary to have a 'perfect' match but can still resolve data. Is it any use compared with FECing the actual data instead and sending that?

6. Are there any dedicated Viterbi/soft decision codec chips as such out there that can work at > 500Kb/s that will take either an I & Q baseband input or some digital converted equiv. I am specifically looking for something that isn't already connected to some radio or other similar hardware.

Regards

Dirk G1TLH

Dirk-Jan Koopman, Tobit Computer Co Ltd
At the source of every error which is blamed on the computer you will find at least two human errors, including the error of blaming it on the computer.

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

7. [ss] correlator

From: "Rui Guerreiro" <rrg98@hotmail.com>
Date: Tue, 13 Apr 1999 02:57:46 PDT
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-15695-1999.04.13-04.58.39--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I would like to know where I can buy correlators that work around
1 or 2 MHz for baseband digital transmission.

Thanks

Rui G

_____
Get Your Private, Free Email at http://www.hotmail.com

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

8. [ss] Re: correlator

From: "Marius Hauki" <Marius.Hauki@datarespons.no>
Date: Tue, 13 Apr 1999 12:25:11 +0200
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-15698-1999.04.13-05.29.37--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Rui Guerreiro wrote:

> I would like to know where I can buy correlators that work around
> 1 or 2 MHz for baseband digital transmission.
>
> Thanks
>
> Rui G
>
> _____
> Get Your Private, Free Email at http://www.hotmail.com
>
> ---
> You are currently subscribed to ss as: MARIUS@DATARESPONS.NO
> To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

There are several vendors.
Harris used to have some pretty good bit correlators.
You can also make them yourselves with a couple of shift regs
and some xors.You would need some way of clocking the data though.
The best way is probably to use a DSP to correlate. Actually you can do some good
correlation with FIR filters that have coefficients to mach the pattern you are
correlating on. Then you would also be able to extract the relative timer information.
That is ;when the match happened relative to some time reference. Several FIR filters can
be
incorporated with a single dsp. That means you can corellate on several patterns.

73 de LA9EEA
Marius Hauki

--

Data Respons har nylig opprettet en mer formalisert
support-tjeneste basert på e-post.
Vennligst send beskrivelse av problemet på ENGELSK til
sw-support@datarespons.no for SW, h.h.v. til
hw-support@datarespons.no for HW.

Marius Hauki   Data Respons AS
Product Manager   Sandviksveien 26
                                P.O. Box 489
                                N-1322 Hoevik
Dir.Ph. :+47 67 11 20 16   Norway
phone   :+47 67 11 20 00
fax   :+47 67 11 20 50   mailto:marius@datarespons.no
Cellular :+47 90 05 16 66   http://www.datarespons.no

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

9. [ss] □□: [ss] correlator

From: "yamn" <yamn@public.bjnet.edu.cn>
Date: Tue, 13 Apr 1999 22:32:30 +0800
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-15730-1999.04.13-10.26.09--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Using FPGA or DSP.

Best regards,

Zhang,Yaming
yamn@public.bjnet.edu.cn
-----Original Message-----
□□□: Rui Guerreiro <rrg98@hotmail.com>
□□□: TAPR Spread Spectrum Special Interest Group <ss@lists.tapr.org>
□□: 1999□4□13□ 17:01
□□: [ss] correlator

>I would like to know where I can buy correlators that work around
>1 or 2 MHz for baseband digital transmission.
>
>Thanks
>
>Rui G
>
>
>
>_____
>Get Your Private, Free Email at http://www.hotmail.com
>
>---
>You are currently subscribed to ss as: yamn@public.bjnet.edu.cn
>To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org
>

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To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

10. [ss] RadioLAN quotes

From: "Gregory Beat" <gregory.beat@mediaone.net>
Date: Tue, 13 Apr 1999 18:35:50 -0500
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-15812-1999.04.13-18.39.26--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Michael Clair
CEO
RadioLAN Inc. (Sunnyvale, Calif.)

Recent quotations:

ON CONVERGENCE: "Pundits will have you believe that it's here. But
vendors have to rework their technology, throwing out the old and
bringing in the new."

ON PRODUCT FAILURES: "We've got more battle scars than anybody. Sometimes
it takes years to perfect things."

ON WIRELESS LANS: "1999 will be the year of the WLAN. It's easy to overcome
old perceptions about these products. Just make something great and let
test labs publish their reports."

For more from Michael Clair, click on
http://www.data.com/issue/990421/clair.html

"Once you have flown, you will walk the earth with
your eyes turned skyward, for there you have been,
there you long to return." -- Leonardo da Vinci

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

11. [ss] Re: correlator

From: Henrique Miranda <hmiranda@newton.inescn.pt>
Date: Wed, 14 Apr 1999 01:48:10 +0100 (WET DST)
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-15821-1999.04.13-19.51.52--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Hello Rui,

> I would like to know where I can buy correlators that work around
> 1 or 2 MHz for baseband digital transmission.
>

Stanford Telecom (http://www.stelhq.com) has several chips that
probably will do. These are:

  STEL-2410: high rate accumulator/correlator
  STEL-3310: dual 64-tap, 11 Mcps, cascadable digital matched filter
  STEL-3340: dual 64-tap, 11 Mcps, cascadable digital matched filter
             (with micro-processor interface)

I hope this helps.

Henrique Miranda

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To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

12. [ss] Time Domain in USA Today

From: "Marty Tennant" <marty@sccoast.net>
Date: Tue, 13 Apr 1999 23:49:06 -0400
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-15848-1999.04.13-22.53.08--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Hope everyone got to see the excellent article in USA Today on Time Domain.

http://www.time-domain.com/news.html

will allow you to download a .pdf version of the USA Today articles if you
missed them in the 4/9/99 issue.

Marty Tennant
President
Low Tech Designs, Inc.
"Bringing Technology Down to Earth" sm
YEA!! sm - Your Electronic Agent!! sm
1204 Saville St.
Georgetown, SC 29440
843 527-4485 voice
843 527-7783 fax

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To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

13. [ss] Re: Time Domain in USA Today

From: "Steve Sampson" <ssampson@usa-site.net>
Date: Wed, 14 Apr 1999 08:19:53 -0500
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-15926-1999.04.14-08.26.57--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Well I went and read the article. First off, it's an article from the legal
section and not the technical section.

Second, I still don't know what "time-domain modulation" is? I would
expect if you modulate the time, that biological death occurs :-)

Third, if the patent was issued in 1987, then in 2004 it would expire
(another 5 years). I suspect any beginning lawyer can keep a case
tied-up that long.

Meanwhile, maybe Time-Domain could publish some "technical"
articles? Ways around the FCC prohibition of pulse transmissions?

You would think that after 12 years since patent issue, that they would
have even one product to show, rather than a laboratory experiment??

Steve

-----Original Message-----
From: Marty Tennant <marty@sccoast.net>

To: TAPR Spread Spectrum Special Interest Group <ss@lists.tapr.org>
Date: Tuesday, April 13, 1999 10:50 PM
Subject: [ss] Time Domain in USA Today

>Hope everyone got to see the excellent article in USA Today on Time Domain.
>
>http://www.time-domain.com/news.html
>
>will allow you to download a .pdf version of the USA Today articles if you
>missed them in the 4/9/99 issue.
>
>Marty Tennant
>President
>Low Tech Designs, Inc.
>"Bringing Technology Down to Earth" sm
>YEA!! sm - Your Electronic Agent!! sm
>1204 Saville St.
>Georgetown, SC 29440
>843 527-4485 voice
>843 527-7783 fax
>
>
>
>---
>You are currently subscribed to ss as: SSAMPSON@USA-SITE.NET
>To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

---
You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

14. [ss] Re: Time Domain in USA Today

From: "Marty Tennant" <marty@sccoast.net>
Date: Wed, 14 Apr 1999 10:08:09 -0400
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-15934-1999.04.14-09.12.14--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

There were two .pdf files from USA Today on the Time Domain site. One was
a front-page article on the legal fight with Lawrence Livermore Labs. The
other was a business section article on the technology.

I would also encourage all interested parties to go search the FCC's
Electronic Filing System for comments and reply comments in the 98-153 UWB
docket.

Time Domain has a 92 page Reply Comment filing that is worth downloading.

Goto:

https://gullfoss.fcc.gov/cgi-bin/ws.exe/prod/ecfs/comsrch.hts

and enter 98-153 in the "Proceeding" field.

Lots of good technical info.

Marty Tennant
President
Low Tech Designs, Inc.
"Bringing Technology Down to Earth" sm
YEA!! sm - Your Electronic Agent!! sm
1204 Saville St.
Georgetown, SC 29440
843 527-4485 voice
843 527-7783 fax
----- Original Message -----
From: Steve Sampson <ssampson@usa-site.net>
To: TAPR Spread Spectrum Special Interest Group <ss@lists.tapr.org>
Sent: Wednesday, April 14, 1999 9:19 AM
Subject: [ss] Re: Time Domain in USA Today

Well I went and read the article. First off, it's an article from the
legal
section and not the technical section.

Second, I still don't know what "time-domain modulation" is? I would

expect if you modulate the time, that biological death occurs :-)

Third, if the patent was issued in 1987, then in 2004 it would expire
(another 5 years). I suspect any beginning lawyer can keep a case
tied-up that long.

Meanwhile, maybe Time-Domain could publish some "technical"
articles? Ways around the FCC prohibition of pulse transmissions?

You would think that after 12 years since patent issue, that they would
have even one product to show, rather than a laboratory experiment??

Steve

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15. [ss] Re: Time Domain in USA Today

From: Ray Vaughan <ray@rayvaughan.com>
Date: Wed, 14 Apr 1999 10:51:12 -0400
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-15945-1999.04.14-09.54.58--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

>Meanwhile, maybe Time-Domain could publish some "technical"
>articles? Ways around the FCC prohibition of pulse transmissions?
>
>You would think that after 12 years since patent issue, that they would
>have even one product to show, rather than a laboratory experiment??

Seems to me that if they were real serious, they would have moved testing
to a more forward thinking country... or maybe one that doesn't care. I'm
sure we could all think of places where such technology could be tested.
The FCC thing sounds more like an excuse.

Ray, KD4BBM

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

16. [ss] Re: Time Domain in USA Today

From: "Marty Tennant" <marty@sccoast.net>
Date: Wed, 14 Apr 1999 11:03:27 -0400
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-15946-1999.04.14-10.07.35--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

What I found interesting is that Lawrence Livermore Labs tried to rip off
their patents, and then sold the technology for BIG BUCKS to companies that
couldn't use it, because the FCC rules didn't allow it.

If you go to their website, they have plenty of technical stuff to satisfy
folks. Or just go look at their patents online.

Marty Tennant
President
Low Tech Designs, Inc.
"Bringing Technology Down to Earth" sm
YEA!! sm - Your Electronic Agent!! sm
1204 Saville St.
Georgetown, SC 29440
843 527-4485 voice
843 527-7783 fax

----- Original Message -----
From: Ray Vaughan <ray@rayvaughan.com>
To: TAPR Spread Spectrum Special Interest Group <ss@lists.tapr.org>
Sent: Wednesday, April 14, 1999 10:51 AM
Subject: [ss] Re: Time Domain in USA Today

>Meanwhile, maybe Time-Domain could publish some "technical"
>articles? Ways around the FCC prohibition of pulse transmissions?
>
>You would think that after 12 years since patent issue, that they would

>have even one product to show, rather than a laboratory experiment??

Seems to me that if they were real serious, they would have moved testing
to a more forward thinking country... or maybe one that doesn't care. I'm
sure we could all think of places where such technology could be tested.
The FCC thing sounds more like an excuse.

Ray, KD4BBM

You are currently subscribed to ss as: marty@sccoast.net
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

---
You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

17. [ss] Another question..

From: Dirk Koopman <djk@tobit.co.uk>
Date: Wed, 14 Apr 1999 16:18:30 +0100 (BST)
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-15949-1999.04.14-10.35.01--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Here is one I forgot..

If you use something like a GPS signal as a timing reference and you then
take a number of DSS signals centred on the same frequency with the same
spreading code (in every way identical) but offset the synconisation of each
signal from the reference by a certain amount, can you expect to be able to
resolve each of these signals separately?

Dirk G1TLH

Dirk-Jan Koopman, Tobit Computer Co Ltd
At the source of every error which is blamed on the computer you will find
at least two human errors, including the error of blaming it on the computer.

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

18. [ss] Re: Another question..

From: Jake Janovetz <janovetz@tempest.ece.uiuc.edu>
Date: Wed, 14 Apr 1999 11:10:16 -0500
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-15960-1999.04.14-11.15.17--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Yes. The autocorrelation function will provide suitable
separation. However, the trouble comes in knowing which of
those signals is which. That is, you can separate them, but
you don't quite know their identity because the code sequence
is the same.

    Cheers,
    Jake

On Wed, Apr 14, 1999 at 04:18:30PM +0100, Dirk Koopman wrote:
> Here is one I forgot..
>
> If you use something like a GPS signal as a timing reference and you then
> take a number of DSS signals centred on the same frequency with the same
> spreading code (in every way identical) but offset the synconisation of each
> signal from the reference by a certain amount, can you expect to be able to
> resolve each of these signals separately?
>
> Dirk G1TLH
> ---
> Dirk-Jan Koopman, Tobit Computer Co Ltd
> At the source of every error which is blamed on the computer you will find
> at least two human errors, including the error of blaming it on the computer.

>
>
>
> ---
> You are currently subscribed to ss as: JANOVETZ@UIUC.EDU
> To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

--
   janovetz@uiuc.edu | Once you have flown, you will walk the earth with
 University of Illinois | your eyes turned skyward, for there you have been,
                        | there you long to return.   -- da Vinci
        PP-ASEL | http://www.ews.uiuc.edu/~janovetz/index.html

---
You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

19. [ss] Re: Time Domain in USA Today

From: Dewayne Hendricks <dewayne@warpspeed.com>
Date: Wed, 14 Apr 1999 13:38:32 -0700
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-16001-1999.04.14-15.43.56--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

At 10:51 -0400 4/14/99, Ray Vaughan wrote:
>Seems to me that if they were real serious, they would have moved testing
>to a more forward thinking country... or maybe one that doesn't care. I'm
>sure we could all think of places where such technology could be tested.
>The FCC thing sounds more like an excuse.

        I have talked to them about this and they are looking to do just that.

-- Dewayne

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

20. [ss] Re: Another question..

From: Mike Cummings <mgcummings@yahoo.com>
Date: Wed, 14 Apr 1999 13:57:18 -0700 (PDT)
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-16525-1999.04.17-14.01.54--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Yes, the military use systems that do something very
simular with FH to allow freq. reuse, etc. There are
some limits such as code length, and clocking errors
between radios (this can be largely solved by useing
your GPS as a common ref.). The most difficult thing
is getting initial code and clock sync. with proper
offset. (Your idea).

                              kb7rcf@amsat.org

_____
Do You Yahoo!?
Get your free @yahoo.com address at http://mail.yahoo.com

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

21. [ss] DS/FS

From: "Mr. Mutimushi Patrick" <mutimp@ENG.UNZA.ZM>
Date: Mon, 19 Apr 1999 08:15:22 +0200
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-16721-1999.04.19-01.14.24--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Can somebody help me on how the hybrid method using DS/FH work. I
would like to know how such a system can be implemented. I am doing a
project on spread spectrum and its use in civilian communication
systems.

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

22. [ss] TAPR activities at Dayton HamVention

From: "Greg Jones, WD5IVD" <wd5ivd@tapr.org>
Date: Mon, 19 Apr 1999 12:58:12 -0500
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-16818-1999.04.19-13.04.23--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

TAPR Dayton Activities 1999
for details visit: http://www.tapr.org/tapr/html/Fdayton.html

---

TAPR Digital Forum on Friday

The schedule for the TAPR digital forum is:
10:00 - 10:05am (5 min)
Introduction to Forum, John Ackermann, N8UR

10:05 - 10:30am (25min)
TAPR Update, Greg Jones, WD5IVD

10:30 - 11:00am (30 min)
Linux AX.25 Update, John Ackermann, N8UR

11:00 - 11:30am (30 min)
PIC Development Update, Steve Bible, N7HPR and John Hansen, W2FS

11:30 - 12:00noon (30 min)
GPS Projects, Steve Bible, N7HPR

12:00noon - 12:30pm (30 min)
Compact Flash Card Project, John Koster, W9DDD

12:30 - 1:00pm (30 min)
TAPR APRS News, Steve Dimse, K4HG and Stan Horzepa, WA1LOU

1:00pm - 1:45pm (45 min)
FHSS Radio Project Update, Tom McDermott, N5EG

Attending the 1999 Dayton Hamvention? Then don't miss out on PACK*BASH!

What?
An event for the digitally-inclined ham, featuring:
* Buffet dinner
* "A Little Technology Goes a Long Way" -- Keynote address
by Dave Pederson, N7BHC
* TAPR special interest group meetings
* "Birds of a Feather" gatherings

When?
Friday evening, May 14, 1999
Doors open at 7:00 pm; dinner served at 7:30 pm
Speaker and meetings after dinner

Where?
NCR "Sugarcamp" Conference Center, 101 W. Schantz Ave. --
South of downtown Dayton, just west of Main St. (Rt 48).
Maps available on the TAPR web site (www.tapr.org) or at the
TAPR booth.

How?
Dinner requires advance registration and payment through TAPR.
Tickets will be available at the TAPR booth on Friday, though
we strongly encourage registration <before> Hamvention. The cost
is $20.00 per person, tax and tip included.

All amateurs are welcome to attend, enjoy the speaker, and
particpate in the meetings, although only those purchasing a
dinner can eat.

To register, contact:
PACK*BASH
c/o TAPR
8987-309 E. Tanque Verde Road #337
Tucson, AZ 85749-9399

Phone: (940) 383-0000
Fax: (940) 566-2544
Internet: tapr@tapr.org

Visa/Mastercard Accepted

Who?
PACK*BASH is co-sponsored by TAPR -- Tucson Amateur Packet
Radio, the national leader in digital communication -- and the
Miami Valley FM Association, Dayton's packet radio club.

For more information (including maps), go to
http://www.tapr.org/tapr/html/dayton.html,
or send email to tapr@tapr.org.

You can request information via packet radio at
BASH@W8APR.#DAY.OH.USA.NOAM.

Greg Jones, WD5IVD Austin, Texas
wd5ivd@tapr.org http://www.tapr.org/~wd5ivd

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

23. [ss] DSSS

From: Thedy Suandi <thedy@students.itb.ac.id>
Date: Wed, 21 Apr 1999 12:37:07 +0700 (JAVT)
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-17100-1999.04.21-00.42.26--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Can somebody help me to explain about the main difference of metode
aquisition with sliding correlator and PN matched filter on tecnic direct
sequence spread spectrum and the application in wireless LAN system.

Which one that has more benefit and how about work process from that one?

thanks
Thedy Suandi

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

24. [ss] Spreadspectrum Packetradio group:Check worlds first IP-telephony handheld!

From: "Hamoperator SM7UGT Marcel bos" <sm1ugt@hotmail.com>
Date: Thu, 22 Apr 1999 10:04:14 PDT
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-17312-1999.04.22-12.04.17--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

http://www.symbol.com/data/std00069.htm

Can this one be integrated in our system?

_____
Get Your Private, Free Email at http://www.hotmail.com

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

25. [ss] ARRL & TAPR 1999 DCC Announcement

From: Greg Jones <wd5ivd@tapr.org>
Date: Thu, 29 Apr 1999 16:00:10 -0500

1999 ARRL and TAPR Digital Communications Conference
September 24-26, 1999
Phoenix, Arizona

Full announcement and details can be found
at: http://www.tapr.org/dcc

The 1999 ARRL and TAPR Digital Communications Conference will be held September 24-26, 1999 in Phoenix, Arizona. This year's conference location is just minutes away from the Phoenix Sky Harbor International Airport (PHX).

Symposia, Seminars, Banquet

In addition to the presentation of papers on Saturday, three symposia/seminars will be held. These sessions are provided to allow those with additional time and interest to make the most of the Digital Communications Conference. For those who may have interest in just one symposium or seminar, registration for the conference is not required to attend these activities. This allows maximum flexibility for those who may want to participate during the Digital Communications Conference, but do not have an entire weekend to devote to the event.

The Third APRS National Symposium will be held on Friday and will be moderated by Steve Dimse, K4HG (the developer of javAPRS). It will likely include many APRS software authors, such as Bob Bruninga, WB4APR (the father of APRS), Keith Sproul, WU2Z, Mark Sproul, KB2ICI (the developers of MacAPRS and WinAPRS), Brent Hildebrand, KH2Z (the developer of APRSPLUS), Mike Musick, N0QBF (developer of PocketAPRS), and other nationally-known APRS leaders. Join this group for the afternoon and evening for in-depth discussions and presentations on the current and future status of APRS. This is a unique opportunity to gain insight into this fast-growing digital aspect of amateur operations that combines computers, packet radio, and GPS (Global Positioning System).

Starting late Friday afternoon, a half-day technical seminar will be held. In the past this seminar has covered topics such as RF, DSP, Advanced Networking Topologies and other stimulating topics.

On Saturday night the DCC Banquet will be held. This year the conference is proud to have Geoff Baehr, N6LXA, Sun Microsystems Chief Network Officer at the banquet to speak. Sun Microsystems has been doing some very exciting things in networking over the years and the talk should be an interesting one. After the banquet there will be time for special interest group gatherings.

The Sunday morning seminar will be focused on PIC development, design, and programming. This five-and-a-half hour seminar will focus on the things you need to know now in order to understand and begin to participate in PIC development. PIC processors are becoming very important in various project designs and implementations. This seminar will by presented by the TAPR PIC Development team.

Fourth Annual ARRL and TAPR DCC Student Papers Award

ARRL and TAPR especially welcome papers from full-time students to compete for the fourth annual student papers award. Two $500 travel awards may be given, one in each of the following categories: a) best technical/theory-oriented paper by a student, and b) best educational or community-oriented application paper by a student. The paper should relate directly to a wireless digital communication topic (see the guidelines for more information). Papers co-authored by educators or telecommunications professionals are also eligible for this award as long as a student is the first author. The deadline for receipt of finished student paper manuscript is July 10, 1999. Please note that this deadline is different from the general conference paper submission date. For full details and paper guidelines contact TAPR or browse to http://www.tapr.org/dcc.

Call for Conference Proceeding Papers

Anyone interested in digital communications is invited to submit a paper for publication in the Conference Proceedings. Presentation at the conference is not required for publication. The primary purpose of the conference is to communicate ideas and techniques regarding digital communications. Papers written in an informal style are welcome, as well as those written to academic standards. If you know of someone who is doing great things with digital communications, be sure to tell them about this! Papers are due by August 9, 1999, and should be submitted to Maty Weinberg, ARRL, 225 Main Street, Newington, CT 06111, or via e-mail to lweinberg@arrl.org. The paper submission guidelines are available on-line (http://www.tapr.org/dcc).

International Co-Host

PRUG (Packet Radio User Group of Japan) will be the International co-host for a second year running. PRUG will be hosting an informal social Friday evening before their seminar and symposium is held. Visit http://www.prug.or.jp for more information about the organization.

Full information on the conference and hotel information can be obtained by contacting Tucson Amateur Packet Radio, 8987-309 E. Tanque Verde Road #337, Tucson, AZ 85749-9399, phone 940-383-0000, fax 940-566-2544, e-mail tapr@tapr.org, browse www.tapr.org/dcc.

Sincerely,
Greg Jones, WD5IVD, TAPR Conference Chair
Steve Stroh, N8GNJ, Conference Manager
Dan Meredith, N7MRP, Local Host Liaison
Keith Justice, KF7TP, Local Host Liaison

Note: If you need conference handouts or flyers for ham club meetings, contact TAPR to get what you need!

Hotel Information

Conference presentations, meetings, and seminars will be held at the Holiday Inn Select Airport. Special DCC rooms rates are $69/single and $79/double per night. When making reservations with the hotel, be sure to indicate you are attending the ARRL and TAPR DCC in order to get the discount. It is highly recommended that you book your room prior to arriving. A block of 75 rooms is reserved until August 22, 1999. After the 75 rooms are booked, rooms will only be available in nearby hotels, so be sure to book your rooms early! The hotel provides transportation to and from the Phoenix Sky Harbor International Airport. Please contact the hotel to arrange specific transportation needs.

Holiday Inn Select Airport (conference hotel)
4300 E Washington
Phoenix, AZ 850234
Phone 602-273-7778, fax 602-286-1109

Tucson Amateur Packet Radio
8987-309 E Tanque Verde Rd #337 * Tucson, Az * 85749-9399
e-mail: tapr@tapr.org web: <http://www.tapr.org/>
ftp: ftp.tapr.org
phone: 940-383-0000 fax: 940-565-2544

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

26. [ss] 900 Mhz. Yagi design article

From: Lawrence Gruber <lawrence@javanet.com>
Date: Fri, 30 Apr 1999 21:07:00 -0400
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-18528-1999.04.30-20.17.19--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

The new April issue of the British magazine, Elektor Electronics,
has a nice design article for an eight element tapered yagi
(6 directors) for 900 Mhz. (33.33 cm). The antenna length is 51.3 cm.
And the gain is about 11 dB. Balun construction is also described (RG58U).
..that's Elektor, April, 1999. Volume 25 No. 276., pg. 22ff.

~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
Larry (Lawrence) J. Gruber
Medford, Massachusetts USA
lawrence@javanet.com
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~

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May 1999

Original source file: ss.9905
Source: http://ftp.tapr.org/tapr_history/SIG_Archives/spread-spectrum-sig/mail_archive/ss.9905

1. [ss] Softwares...

```
From: Kleber Almeida <kleber@magiclink.com.br>
Date: Sat, 01 May 1999 05:30:01 -0300
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-18582-1999.05.01-03.33.05--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain
```

Where i find software's for calculate fade margin,
path loss, etc. with graphical ambient (Windows) ?

```
[Attachment: kleber.vcf; text/x-vcard; 360 bytes]
```

---

2. [ss] RE: ss digest: April 30, 1999

```
From: "Azahari Ishak (EMY)" <Azahari.Ishak@emy.ericsson.se>
Date: Mon, 3 May 1999 04:13:02 +0200
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-18811-1999.05.02-21.14.42--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain
```

To Whom it May Concern,

Please change my email address to

Azahari.Ishak@emy.ericsson.se <mailto:Azahari.Ishak@emy.ericsson.se>

Thank you.

Cheers :-) aza

-----Original Message-----
From: TAPR Spread Spectrum Special Interest Group digest
[mailto:ss@lists.tapr.org]
Sent: Saturday, May 01, 1999 1:03 PM
To: ss digest recipients
Subject: ss digest: April 30, 1999

> ----------
> From: TAPR Spread Spectrum Special Interest Group
digest[SMTP:SS@LISTS.TAPR.ORG]
> Sent: Saturday, May 01, 1999 1:03:06 PM
> To: ss digest recipients
> Subject: ss digest: April 30, 1999
> Auto forwarded by a Rule
>
TAPR Spread Spectrum Special Interest Group Digest for Friday, April 30,
1999.

1. 900 Mhz. Yagi design article

Subject: 900 Mhz. Yagi design article
From: Lawrence Gruber <lawrence@javanet.com>
Date: Fri, 30 Apr 1999 21:07:00 -0400
X-Message-Number: 1

The new April issue of the British magazine, Elektor Electronics,
has a nice design article for an eight element tapered yagi
(6 directors) for 900 Mhz. (33.33 cm). The antenna length is 51.3 cm.
And the gain is about 11 dB. Balun construction is also described (RG58U).
..that's Elektor, April, 1999. Volume 25 No. 276., pg. 22ff.

~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
Larry (Lawrence) J. Gruber
Medford, Massachusetts USA
lawrence@javanet.com
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~

END OF DIGEST

You are currently subscribed to ss as: ECMAZA@XCHG.EMY.ERICSSON.SE
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

---
You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

3. [ss] Re: ss digest: May 01, 1999

From: Roger Boggs <rogerboggs@csi.com>
Date: Mon, 3 May 1999 8:14:30 -0500
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-18866-1999.05.03-07.13.30--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Check out PathLoss software by Contract Telecommunications Engineering at www.pathloss.com.

I've been using their product for nearly 10 years and it's accurate, flexible, and easy to use. I consider it to be far better than any other
programs out there, and I've tried several.

Roger Boggs
C-Spec Corporation
www.overlan.com

At 5/2/99, you wrote:
>
>TAPR Spread Spectrum Special Interest Group Digest for Saturday, May 01, 1999.
>
>1. Softwares...
>
>--
>
>Subject: Softwares...
>From: Kleber Almeida <kleber@magiclink.com.br>
>Date: Sat, 01 May 1999 05:30:01 -0300
>X-Message-Number: 1
>
>This is a multi-part message in MIME format.
>--------------E99708D076D25A03F5765E94
>Content-Type: text/plain; charset=us-ascii
>Content-Transfer-Encoding: 7bit
>
>
>
>   Where i find software's for calculate fade margin,
>path loss, etc. with graphical ambient (Windows) ?
>
>--------------E99708D076D25A03F5765E94
>Content-Type: text/x-vcard; charset=us-ascii;
> name="kleber.vcf"
>Content-Transfer-Encoding: 7bit
>Content-Description: Card for Kleber Almeida
>Content-Disposition: attachment;
> filename="kleber.vcf"
>
>begin:vcard
>n:Almeida;Kleber
>x-mozilla-html:FALSE
>org:Arrow Sistemas - Wireless Solutions for a Connected World
>adr:;;;Salvador;Bahia;40450-770;Brazil
>version:2.1
>email;internet:kleber@magiclink.com.br
>title:Technician in Telecommunications
>note:A Lover for Wireless Access (Last Mile) and Fiber Technology !
>x-mozilla-cpt:;-13296
>fn:Kleber Almeida
>end:vcard
>
>--------------E99708D076D25A03F5765E94--
>
>
>
>

>---
>
>END OF DIGEST
>
>---
>You are currently subscribed to ss as: ROGER@C-SPEC.COM
>To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org
>
>
>

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

4. [ss] Coding to beat turbo codes.

From: Jake Janovetz <janovetz@tempest.ece.uiuc.edu>
Date: Thu, 6 May 1999 08:42:39 -0500
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-19427-1999.05.06-08.51.25--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

DSP and Spread Spectrum lists:

I was forwarded this message about a month ago, but thought
that some people on these lists might find this interesting.
Basically, they have a coding scheme which beats turbo
codes by about 0.5dB. They are now very close to the Shannon
limit for capacity.

   Cheers,
   Jake

---------- Forwarded message ----------
Date: Mon, 5 Apr 1999 18:19:25 -0400

Dear Colleague:

In recent weeks we designed sequences of low-density parity check
codes that provably perform at rates extremely close to the Shannon
capacity. For instance, our best code of rate 1/2 is
asymptotically less than 0.06dB away from capacity for the AWGN
channel. Simulation results indicate that for a length of 1,000,000 we
can achieve an error probability of 10^(-6) at 0.13dB from capacity.
Our codes are built from highly irregular bipartite graphs with
carefully chosen degree patterns on both sides, by optimizing the
threshold obtained in our previous paper.
Moreover, the paper gives some more theoretical insight into the
behavior of the decoding process.

A preprint of our paper, entitled
"Design of provably good low-density parity check codes"
can be obtained at

http://cm.bell-labs.com/who/{ruediger or tjr}/pub.html

As always, comments are most welcome.

                    Best regards,

                    Tom Richardson
                    Amin Shokrollahi
                    Ruediger Urbanke
----- End forwarded message -----

--
   janovetz@uiuc.edu | Once you have flown, you will walk the earth with
 University of Illinois | your eyes turned skyward, for there you have been,
                        | there you long to return.   -- da Vinci
        PP-ASEL | http://www.ews.uiuc.edu/~janovetz/index.html

---
You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

5. [ss] Re: Coding to beat turbo codes.

From: Brett Glass <brett@lariat.org>
Date: Thu, 06 May 1999 09:34:53 -0600
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Cc: janovetz@uiuc.edu
Message-ID: <LYR6751-19437-1999.05.06-10.39.40--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Why, oh why do people persist in posting papers in PostScript? The only way
many people can read this proprietary format online is in a graphics
program. Is the paper available in HTML or another non-proprietary, easily
readable format?

--Brett Glass

At 08:42 AM 5/6/99 -0500, Jake Janovetz wrote:
>http://cm.bell-labs.com/who/{ruediger or tjr}/pub.html

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

6. [ss] Re: Coding to beat turbo codes.

From: Jake Janovetz <janovetz@tempest.ece.uiuc.edu>
Date: Thu, 6 May 1999 11:20:14 -0500
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Cc: janovetz@uiuc.edu
Message-ID: <LYR6751-19445-1999.05.06-11.29.02--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Well, typically, I would agree that text is preferred. However,
papers that make heavy use of equations, diagrams, or plots
(such as bit-error rate curves) should be in PostScript or
pdf. Now, Microsoft Word is completely unacceptable, but
PostScript and pdf have viewers available on pretty much
every platform I've considered.

Ever tried to plot a bit error rate curve in text?

   Cheers,
   Jake

On Thu, May 06, 1999 at 09:34:53AM -0600, Brett Glass wrote:
> Why, oh why do people persist in posting papers in PostScript? The only way
> many people can read this proprietary format online is in a graphics
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>
> --Brett Glass
>
> At 08:42 AM 5/6/99 -0500, Jake Janovetz wrote:
> >http://cm.bell-labs.com/who/{ruediger or tjr}/pub.html

--
   janovetz@uiuc.edu | Once you have flown, you will walk the earth with
 University of Illinois | your eyes turned skyward, for there you have been,
                        | there you long to return.   -- da Vinci
        PP-ASEL | http://www.ews.uiuc.edu/~janovetz/index.html

---
You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

7. [ss] RE: Coding to beat turbo codes.

From: Jeremy Mcmillan <mcmillan@cboe.com>
Date: Thu, 6 May 1999 11:51:14 -0500
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-19449-1999.05.06-11.53.43--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

If you cannot read the .ps file format, free (open-source) software is available for almost all
platforms at the following link. Adobe PDF or PostScript is necessary for technical documents because
vector graphics/bitmap embedding are necessary to include graphs. Everyone should have a copy of this or
 something similar.

http://www.cs.wisc.edu/~ghost/

-----Original Message-----

From: Jake Janovetz [SMTP:janovetz@tempest.ece.uiuc.edu]
Sent: Thursday, May 06, 1999 8:43 AM
To: TAPR Spread Spectrum Special Interest Group
Subject: [ss] Coding to beat turbo codes.

DSP and Spread Spectrum lists:

I was forwarded this message about a month ago, but thought
that some people on these lists might find this interesting.
Basically, they have a coding scheme which beats turbo
codes by about 0.5dB. They are now very close to the Shannon
limit for capacity.

   Cheers,
   Jake

---------- Forwarded message ----------
Date: Mon, 5 Apr 1999 18:19:25 -0400

Dear Colleague:

In recent weeks we designed sequences of low-density parity check
codes that provably perform at rates extremely close to the Shannon
capacity. For instance, our best code of rate 1/2 is
asymptotically less than 0.06dB away from capacity for the AWGN
channel. Simulation results indicate that for a length of 1,000,000 we
can achieve an error probability of 10^(-6) at 0.13dB from capacity.
Our codes are built from highly irregular bipartite graphs with
carefully chosen degree patterns on both sides, by optimizing the
threshold obtained in our previous paper.
Moreover, the paper gives some more theoretical insight into the
behavior of the decoding process.

A preprint of our paper, entitled
"Design of provably good low-density parity check codes"
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http://cm.bell-labs.com/who/{ruediger or tjr}/pub.html

As always, comments are most welcome.

                    Best regards,

                    Tom Richardson
                    Amin Shokrollahi
                    Ruediger Urbanke
----- End forwarded message -----

--
   janovetz@uiuc.edu | Once you have flown, you will walk the earth with
 University of Illinois | your eyes turned skyward, for there you have been,
                        | there you long to return.   -- da Vinci
        PP-ASEL | http://www.ews.uiuc.edu/~janovetz/index.html

---
You are currently subscribed to ss as: mcmillan@cboe.com
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

---
You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

8. [ss] RE: Coding to beat turbo codes.

From: Brett Glass <brett@lariat.org>
Date: Thu, 06 May 1999 16:49:53 -0600
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-19491-1999.05.06-17.55.01--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

At 11:51 AM 5/6/99 -0500, Jeremy Mcmillan wrote:

>If you cannot read the .ps file format, free (open-source) software is available for almost all
platforms at the following link. Adobe PDF or PostScript is necessary for technical documents because
vector graphics/bitmap embedding are necessary to include graphs.

An ordinary Web page can include graphs. A requirement for a specialized third-party
program is not acceptable and limits the platforms on which the output can be viewed.

--Brett Glass

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

9. [ss] RE: Coding to beat turbo codes.

From: Steve Sampson <ssampson@usa-site.net>
Date: Thu, 6 May 1999 18:01:32 -0500 (CDT)
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-19493-1999.05.06-18.06.13--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Instead of whining why not convert the charts to gif's and HTML it
for the postscript challenged out there?

Steve

> An ordinary Web page can include graphs. A requirement for a specialized third-party
> program is not acceptable and limits the platforms on which the output can be viewed.
>
> --Brett Glass

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

10. [ss] RE: Coding to beat turbo codes.

From: Brett Glass <brett@lariat.org>
Date: Thu, 06 May 1999 17:19:23 -0600
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-19494-1999.05.06-18.24.12--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Because I have not yet found a postscript plug-in for my browser. There may
not be any such thing.

--Brett Glass

At 06:01 PM 5/6/99 -0500, Steve Sampson wrote:
>Instead of whining why not convert the charts to gif's and HTML it
>for the postscript challenged out there?
>
>Steve
>
> > An ordinary Web page can include graphs. A requirement for a specialized third-party
> > program is not acceptable and limits the platforms on which the output can be viewed.
> >
> > --Brett Glass
>
>---
>You are currently subscribed to ss as: BRETT@LARIAT.ORG
>To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

---
You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

11. [ss] RE: Coding to beat turbo codes.

From: Jake Janovetz <janovetz@tempest.ece.uiuc.edu>
Date: Thu, 6 May 1999 18:36:00 -0500
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-19496-1999.05.06-18.44.48--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

One final note from me and I'll let this die... LaTeX is
the de facto language for most scientific writing and journal
articles. It typically produces dvi and ps files. PostScript
is so incredibly universal (how many printers print HTML?)
that I think we can consider it ubiquitous.

What platform are you running on that does not have a port of
Ghostview? I know there are for all UNIXes, OS/2, DOS,
Windows, BeOS.

Cheers,
Jake

On Thu, May 06, 1999 at 05:19:23PM -0600, Brett Glass wrote:
> Because I have not yet found a postscript plug-in for my browser. There may
> not be any such thing.
>
> --Brett Glass
>
> At 06:01 PM 5/6/99 -0500, Steve Sampson wrote:
> >Instead of whining why not convert the charts to gif's and HTML it
> >for the postscript challenged out there?
> >
> >Steve
> >
> > > An ordinary Web page can include graphs. A requirement for a specialized third-party
> > > program is not acceptable and limits the platforms on which the output can be viewed.
> > >
> > > --Brett Glass
> >
> >---
> >You are currently subscribed to ss as: BRETT@LARIAT.ORG
> >To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org
>
>
> ---
> You are currently subscribed to ss as: JANOVETZ@UIUC.EDU
> To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

--
   janovetz@uiuc.edu | Once you have flown, you will walk the earth with
 University of Illinois | your eyes turned skyward, for there you have been,
                        | there you long to return.   -- da Vinci
        PP-ASEL | http://www.ews.uiuc.edu/~janovetz/index.html

---
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12. [ss] RE: Coding to beat turbo codes.

From: Tim Pozar <pozar@kumr.lns.com>
Date: Thu, 6 May 1999 16:58:03 -0700 (PDT)
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-19499-1999.05.06-19.02.42--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Agreed.

And I don't belive it needs to be a plug-in for your browser.
My FreeBSD versions of "Netscape" and "lynx" apps will take *.ps
files and run ghostview or xpdf automagicly.

Tim
--
Jake Janovetz wrote:
> One final note from me and I'll let this die... LaTeX is
> the de facto language for most scientific writing and journal
> articles. It typically produces dvi and ps files. PostScript
> is so incredibly universal (how many printers print HTML?)
> that I think we can consider it ubiquitous.
>
> What platform are you running on that does not have a port of
> Ghostview? I know there are for all UNIXes, OS/2, DOS,
> Windows, BeOS.
>
> On Thu, May 06, 1999 at 05:19:23PM -0600, Brett Glass wrote:
> > Because I have not yet found a postscript plug-in for my browser. There may
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> >
> > --Brett Glass
> >
> > At 06:01 PM 5/6/99 -0500, Steve Sampson wrote:
> > >Instead of whining why not convert the charts to gif's and HTML it
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> > >Steve
> > >
> > > > An ordinary Web page can include graphs. A requirement for a specialized third-party

> > > > program is not acceptable and limits the platforms on which the output can be viewed.
> > > >
> > > > --Brett Glass

--
  Snail: Tim Pozar / LNS / 1978 45th Ave / San Francisco CA 94116 / USA
              POTS: +1 415 665 3790 Radio: KC6GNJ / KAE6247
"It's a damn poor mind that can only think of one way to spell a word."
                        - Andrew Jackson
"What is wanted is not the will to believe, but the will to find out,
    which is the exact opposite."   - Bertrand Russell

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13. [ss] RE: Coding to beat turbo codes.

From: Bruce <bruce@westcut.com>
Date: Thu, 6 May 1999 20:18:38 -0500
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-19507-1999.05.06-20.23.30--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Gentlemen -
So WHERE IS the Postscript viewer for Windows95/98, that odesn't need to be "made?" I looked ofr one a year ago or so and was very disappointed in what I found. There seems to be a number of utilities for UNIX, but I have not found one for Windows that installs in the "usual" windows way?

Comments?

K9BC

From: Tim Pozar[SMTP:pozar@kumr.lns.com]
Sent: Thursday, May 06, 1999 6:58 PM
To: TAPR Spread Spectrum Special Interest Group
Subject: [ss] RE: Coding to beat turbo codes.

Agreed.

And I don't belive it needs to be a plug-in for your browser.
My FreeBSD versions of "Netscape" and "lynx" apps will take *.ps
files and run ghostview or xpdf automagicly.

Tim
--
Jake Janovetz wrote:
> One final note from me and I'll let this die... LaTeX is
> the de facto language for most scientific writing and journal
> articles. It typically produces dvi and ps files. PostScript
> is so incredibly universal (how many printers print HTML?)
> that I think we can consider it ubiquitous.
>
> What platform are you running on that does not have a port of
> Ghostview? I know there are for all UNIXes, OS/2, DOS,
> Windows, BeOS.
>
> On Thu, May 06, 1999 at 05:19:23PM -0600, Brett Glass wrote:
> > Because I have not yet found a postscript plug-in for my browser. There may
> > not be any such thing.
> >
> > --Brett Glass
> >
> > At 06:01 PM 5/6/99 -0500, Steve Sampson wrote:
> > >Instead of whining why not convert the charts to gif's and HTML it
> > >for the postscript challenged out there?
> > >
> > >Steve
> > >
> > > An ordinary Web page can include graphs. A requirement for a specialized third-party
> > > program is not acceptable and limits the platforms on which the output can be viewed.
> > > >
> > > > --Brett Glass

--
  Snail: Tim Pozar / LNS / 1978 45th Ave / San Francisco CA 94116 / USA
              POTS: +1 415 665 3790 Radio: KC6GNJ / KAE6247
"It's a damn poor mind that can only think of one way to spell a word."
                        - Andrew Jackson

"What is wanted is not the will to believe, but the will to find out,
    which is the exact opposite."   - Bertrand Russell

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14. [ss] RE: Coding to beat turbo codes.

From: Tim Pozar <pozar@kumr.lns.com>
Date: Thu, 6 May 1999 19:02:16 -0700 (PDT)
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-19514-1999.05.06-21.06.57--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Bruce wrote:
> Gentlemen -
> So WHERE IS the Postscript viewer for Windows95/98, that odesn't need to =
> be "made?" I looked ofr one a year ago or so and was very disappointed =
> in what I found. There seems to be a number of utilities for UNIX, but =
> I have not found one for Windows that installs in the "usual" windows =
> way?
>
> Comments?
>
> K9BC

I use "GhostScript" for Win95/98. Works great.
See:

        http://www.cs.wisc.edu/~ghost/

Tim

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15. [ss] RE: Coding to beat turbo codes.

From: John Koster <w9ddd@tapr.org>
Date: Thu, 6 May 1999 21:59:56 -0500 (CDT)
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-19522-1999.05.06-22.04.41--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

You'll probably want to search for a file called gsv27550.exe (about
3.5MB), at least that's the one I found to be the most useful for W95.

John Koster, W9DDD
<w9ddd@tapr.org>

  ==
On Thu, 6 May 1999, Tim Pozar wrote:

> Bruce wrote:
> > Gentlemen -
> > So WHERE IS the Postscript viewer for Windows95/98, that odesn't need to =
> > be "made?" I looked ofr one a year ago or so and was very disappointed =
> > in what I found. There seems to be a number of utilities for UNIX, but =
> > I have not found one for Windows that installs in the "usual" windows =
> > way?
> >
> > Comments?
> >
> > K9BC
>
> I use "GhostScript" for Win95/98. Works great.
> See:
>
>   http://www.cs.wisc.edu/~ghost/
>
> Tim
>
> ---
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16. [ss] RE: Coding to beat turbo codes.

From: Robert McGwier <rwmcgwier@home.com>
Date: Thu, 06 May 1999 23:56:03 -0400
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-19533-1999.05.06-23.00.51--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

http://www.cs.wisc.edu/~ghost/gsview/index.html

Go grab gsview from the above and add postscript, .ps to your browser
by going to preferences, navigator, applications, and add a new type.
Think you can handle that?

Bruce wrote:
>
> Gentlemen -
> So WHERE IS the Postscript viewer for Windows95/98, that odesn't need to be "made?" I looked ofr one
a year ago or so and was very disappointed in what I found. There seems to be a number of utilities for
UNIX, but I have not found one for Windows that installs in the "usual" windows way?
>
> Comments?
>
> K9BC
>
> ----------
> From: Tim Pozar[SMTP:pozar@kumr.lns.com]
> Sent: Thursday, May 06, 1999 6:58 PM
> To: TAPR Spread Spectrum Special Interest Group
> Subject: [ss] RE: Coding to beat turbo codes.
>
> Agreed.
>
> And I don't belive it needs to be a plug-in for your browser.
> My FreeBSD versions of "Netscape" and "lynx" apps will take *.ps
> files and run ghostview or xpdf automagicly.
>
> Tim
> --
> Jake Janovetz wrote:
> > One final note from me and I'll let this die... LaTeX is
> > the de facto language for most scientific writing and journal
> > articles. It typically produces dvi and ps files. PostScript
> > is so incredibly universal (how many printers print HTML?)
> > that I think we can consider it ubiquitous.
> >
> > What platform are you running on that does not have a port of
> > Ghostview? I know there are for all UNIXes, OS/2, DOS,
> > Windows, BeOS.
> >
> > On Thu, May 06, 1999 at 05:19:23PM -0600, Brett Glass wrote:
> > > Because I have not yet found a postscript plug-in for my browser. There may
> > > not be any such thing.
> > >
> > > --Brett Glass
> > >
> > > At 06:01 PM 5/6/99 -0500, Steve Sampson wrote:
> > > >Instead of whining why not convert the charts to gif's and HTML it
> > > >for the postscript challenged out there?
> > > >
> > > >Steve
> > > >
> > > > An ordinary Web page can include graphs. A requirement for a specialized third-party
> > > > program is not acceptable and limits the platforms on which the output can be viewed.
> > > >
> > > > --Brett Glass
>
> --
> Snail: Tim Pozar / LNS / 1978 45th Ave / San Francisco CA 94116 / USA
> POTS: +1 415 665 3790 Radio: KC6GNJ / KAE6247
> "It's a damn poor mind that can only think of one way to spell a word."
> - Andrew Jackson
> "What is wanted is not the will to believe, but the will to find out,
> which is the exact opposite." - Bertrand Russell
>

> ---
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>
>   --
>
>   Part 1.2   Type: application/ms-tnef
>   Encoding: base64

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17. [ss] RE: Coding to beat turbo codes.

From: Brett Glass <brett@lariat.org>
Date: Thu, 06 May 1999 22:10:33 -0600
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-19534-1999.05.06-23.16.40--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Ghostscript is GPLed. We avoid the use of GPLed software, since
the intent of the license is to destroy the businesses of
legitimate software developers. (But that's a topic for another
day.) Also, it's not a plug-in. It is a separate, very slow
viewer, like Adobe Acrobat.

--Brett Glass

At 06:36 PM 5/6/99 -0500, Jake Janovetz wrote:
>One final note from me and I'll let this die... LaTeX is
>the de facto language for most scientific writing and journal
>articles. It typically produces dvi and ps files. PostScript
>is so incredibly universal (how many printers print HTML?)
>that I think we can consider it ubiquitous.
>
>What platform are you running on that does not have a port of
>Ghostview? I know there are for all UNIXes, OS/2, DOS,
>Windows, BeOS.
>
>   Cheers,
>   Jake
>
>
>On Thu, May 06, 1999 at 05:19:23PM -0600, Brett Glass wrote:
> > Because I have not yet found a postscript plug-in for my browser. There may
> > not be any such thing.
> >
> > --Brett Glass
> >
> > At 06:01 PM 5/6/99 -0500, Steve Sampson wrote:
> > >Instead of whining why not convert the charts to gif's and HTML it
> > >for the postscript challenged out there?
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> > >Steve
> > >
> > > > An ordinary Web page can include graphs. A requirement for a specialized third-party
> > > > program is not acceptable and limits the platforms on which the output can be viewed.
> > > >
> > > > --Brett Glass
> > >
> > >---
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> > >To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org
> >
> >
> > ---
> > You are currently subscribed to ss as: JANOVETZ@UIUC.EDU
> > To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org
>
>--
>   janovetz@uiuc.edu | Once you have flown, you will walk the earth with
> University of Illinois | your eyes turned skyward, for there you have been,
> | there you long to return.   -- da Vinci
>   PP-ASEL | http://www.ews.uiuc.edu/~janovetz/index.html
>
>---
>You are currently subscribed to ss as: BRETT@LARIAT.ORG
>To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

---
You are currently subscribed to ss as: lyris.ss@tapr.org
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18. [ss] RE: Coding to beat turbo codes.

From: Bob Nielsen <nielsen@primenet.com>
Date: Thu, 6 May 1999 22:20:33 -0700
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-19553-1999.05.07-00.25.19--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

On Thu, May 06, 1999 at 10:10:33PM -0600, Brett Glass wrote:
> Ghostscript is GPLed. We avoid the use of GPLed software, since
> the intent of the license is to destroy the businesses of
> legitimate software developers. (But that's a topic for another
> day.) Also, it's not a plug-in. It is a separate, very slow
> viewer, like Adobe Acrobat.

There are many who would take issue with that, however only the older
versions of Ghostscript are licensed under the GPL. The later versions
are licensed under a more restrictive license.

--
Bob Nielsen   Internet: nielsen@primenet.com
Tucson, AZ   AMPRnet: w6swe@w6swe.ampr.org
DM42nh   http://www.primenet.com/~nielsen

You are currently subscribed to ss as: lyris.ss@tapr.org
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19. [ss] RE: Coding to beat turbo codes.

From: Brett Glass <brett@lariat.org>
Date: Fri, 07 May 1999 02:35:04 -0600
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-19572-1999.05.07-03.39.54--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

At 10:20 PM 5/6/99 -0700, Bob Nielsen wrote:

>There are many who would take issue with that, however only the older
>versions of Ghostscript are licensed under the GPL. The later versions
>are licensed under a more restrictive license.

I hear (though I haven't read it) that the later license is different
in that it's hostile to those who SELL software as well as to those
who write it. (Sigh.)

--Brett Glass

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20. [ss] RE: Coding to beat turbo codes.

From: Dirk Koopman <djk@tobit.co.uk>
Date: Fri, 07 May 1999 09:36:08 +0100 (BST)
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-19573-1999.05.07-03.46.00--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

On 07-May-99 Brett Glass wrote:
> Ghostscript is GPLed. We avoid the use of GPLed software, since
> the intent of the license is to destroy the businesses of
> legitimate software developers. (But that's a topic for another
> day.) Also, it's not a plug-in. It is a separate, very slow
> viewer, like Adobe Acrobat.
>

Give up gents, the man doesn't like or want postscript. Nothing you do, say or
offer is going change his mind.

All of which is a pity, because actually he has a point. In this modern
world, with upcoming SGML derivatives such as DocBook, XML etc (and even with
LaTeX), it is possible - automatically - to produce HTML as well as

postscript output. There really is no reason not to produce an HTML version of
a LaTeX/DocBook/XML academic paper as well as the 'normal' postscript
version.

I too, even though I have postscript/pdf viewers and printers, find it
moderately tedious to have to download a file, probably unzip it, run it
into gs (or let netscape do all that) simply to see from the table of contents
whether it is interesting or not. But having said that, if I require a
hardcopy, then the postscript or pdf version will always produce a better
result AND on fewer pages (<rant>save our trees, plant some more!</rant>).

Dirk Koopman G1TLH

PS with regard to your comments on the GPL, the correct word is 'change' not
'destroy' - but I do understand that to some, especially in the context of
the word 'business', the two terms are equivalent.

PPS I don't quite see how you can square your opposition to the ethos that
spawned the GPL and, at the same time, run a community based 'not for profit'
organisation such as Lariat.

PPPS what has this to do with SS?

Dirk-Jan Koopman, Tobit Computer Co Ltd
At the source of every error which is blamed on the computer you will find
at least two human errors, including the error of blaming it on the computer.

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

21. [ss] RE: Coding to beat turbo codes (STOP THIS THREAD).

From: "f1usa" <f1usa@wanadoo.fr>
Date: Fri, 7 May 1999 09:39:54 +0200
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-19575-1999.05.07-04.17.46--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Brett,

You dislike .ps,
You dislike good programs reading .ps,
You dislike developers who spend a lot of time making free programs,

I understand that's YOUR feeling,
But it's YOUR war, definitely OFF TOPIC here.

Regards from France.

F1USA.

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

22. [ss] RE: Coding to beat turbo codes.

From: Steve Sampson <ssampson@usa-site.net>
Date: Fri, 7 May 1999 07:13:06 -0500 (CDT)
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-19584-1999.05.07-07.17.52--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

You can solve all your problems by purchasing a Hewlett-Packard printer
and an Adobe Postscript cartridge. That way you will be completely
within pure capitalism, and not the variants.

The other solution is to avoid Postscript and ignore submissions in that
format.

Steve

> I hear (though I haven't read it) that the later license is different
> in that it's hostile to those who SELL software as well as to those
> who write it. (Sigh.)
>

> --Brett Glass

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23. [ss] RE: Coding to beat turbo codes.

From: Jake Janovetz <janovetz@tempest.ece.uiuc.edu>
Date: Fri, 7 May 1999 08:06:34 -0500
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-19592-1999.05.07-08.15.23--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

>
> PPPS what has this to do with SS?

Hehe. I posted the coding paper, realizing it had little
to do (directly) with spread spectrum. It quickly degenerated...
My apologies.

   Cheers,
   Jake

--
   janovetz@uiuc.edu | Once you have flown, you will walk the earth with
 University of Illinois | your eyes turned skyward, for there you have been,
                        | there you long to return.   -- da Vinci
        PP-ASEL | http://www.ews.uiuc.edu/~janovetz/index.html

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24. [ss] RE: .PS and GPL

From: "Frederick M. Spinner" <fspinner@hotmail.com>
Date: Fri, 07 May 1999 14:49:07 GMT
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-19604-1999.05.07-09.52.57--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

>Ghostscript is GPLed. We avoid the use of GPLed software, since
>the intent of the license is to destroy the businesses of
>legitimate software developers. (But that's a topic for another
>day.) Also, it's not a plug-in. It is a separate, very slow
>viewer, like Adobe Acrobat.
>
>--Brett Glass

You HAVE to be kidding! Do you think the work of all of the programmers out
there on things like Linux FOR FREE was just some communist plot to destroy
the software industry? (Well maybe Microsoft, but that would be for the
common good!) Hell, most of the programmers on GPL projects are "legimate
software programmers" for their day jobs.

Adobe Acrobat is highly overpriced, and if anything they forced a free
alternative to be created.

God, what rock did you crawl out of! First you moan about interference to
your "free spectrum" by a commercial venture and then you say that free
software is going to ruin the software industry. Maybe Microsoft :-), but
not the whole industry!

I guess TAPR should charge large amounts for the code done for the SS
projects as well? Or is it okay with you do have some things done out of
love and not greed?!?

Fred W0FMS

_____
Get Free Email and Do More On The Web. Visit http://www.msn.com

---
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To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

25. [ss] RE: Coding to beat turbo codes

From: Brett Glass <brett@lariat.org>
Date: Fri, 07 May 1999 08:53:08 -0600
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-19611-1999.05.07-10.19.08--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

At 09:39 AM 5/7/99 +0200, f1usa wrote:

>Brett,
>
>You dislike .ps,

Not a matter of dislike; I merely do not recommend the use of proprietary
formats, of which PostScript is one. PostScript is slow, time-consuming,
memory-intensive, and inconvenient.

>You dislike good programs reading .ps,

Haven't found any good ones. Again, dislike doesn't figure into this.

>You dislike developers who spend a lot of time making free programs,

No, I merely try to avoid supporting the agendas of Richard Stallman,
who is unabashedly anti-business and seeks to destroy programmers'
ability to profit from their work. But, again, that was an aside.

What I was requesting, in my message, was that authors of scholarly
papers publish them in a format which was current (PostScript dates
to the mid-1980s and was not designed with the Internet in mind),
non-proprietary (PostScript is still Adobe-proprietary, although
it's been cloned), and convenient to read with a Web browser.

--Brett Glass

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

26. [ss] RE: .PS and GPL

From: Brett Glass <brett@lariat.org>
Date: Fri, 07 May 1999 09:14:41 -0600
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-19613-1999.05.07-10.22.36--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

At 02:49 PM 5/7/99 +0000, Frederick M. Spinner wrote:

>You HAVE to be kidding! Do you think the work of all of the programmers out there on things like Linux
 FOR FREE was just some communist plot to destroy the software industry?

Many did not (and still do not) understand the history, motivations, or effects
of the GPL.

> (Well maybe Microsoft, but that would be for the common good!) Hell, most of the programmers on GPL
projects are "legimate software programmers" for their day jobs.

Also, many have been lulled by their contempt for Microsoft into supporting an
agenda which hurts Microsoft's competitors more than Microsoft itself! The
GPL forecloses markets which Microsoft's current potential competitors might
have entered. It poisons the well, so to speak.

>Adobe Acrobat is highly overpriced, and if anything they forced a free alternative to be created.

The subject of the discussion was PostScript. However, I would rather have seen
PostScript die due to overpricing (which is the natural order of things when
someone charges too much for a product) than have it preserved, zombie-like,
by the GPL.

>God, what rock did you crawl out of!

Oh, I only have about 20 years of programming, chip design, and financial
and industry analysis behind me. Nothing to speak of. ;-)

>   First you moan about interference to your "free spectrum" by a commercial venture

A different issue. This was a "tragedy of the commons" situation. The same is
not true of the GPL. The GPL is an active attempt to destroy businesses.

 > I guess TAPR should charge large amounts for the code done for the SS projects

> as well?

The problem is not whether there is a charge. The problem is whether the goal
is to destroy the market. The purpose of the GPL is, again, to destroy
for-profit companies, against which the author harbors a grudge.

> Or is it okay with you do have some things done out of love and not greed?!?

The GPL was done out of spite, with intentional malice toward programmers seeking
to earn a living. Perversely, it attempts to turn their efforts AGAINST their
own interests, and too many have fallen for the propaganda surrounding the
GPL and fall into that trap.

I realize that many do not realize this, but this is its well-documented history.
I encourage you to research this.

--Brett Glass

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

27. [ss] RE: .PS and GPL

From: Barry McLarnon VE3JF <bm@lynx.ve3jf.ampr.org>
Date: Fri, 7 May 1999 11:40:03 -0400 (EDT)
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-19615-1999.05.07-10.44.47--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

"Frederick M. Spinner" <fspinner@hotmail.com> wrote:
> You HAVE to be kidding! Do you think the work of all of the programmers out
> there on things like Linux FOR FREE was just some communist plot to destroy
> the software industry? (Well maybe Microsoft, but that would be for the
> common good!) Hell, most of the programmers on GPL projects are "legimate
> software programmers" for their day jobs.

[remainder of flame bait deleted]

This is a perfect example of a message that should have gone in private email,
not posted to this list. This is an interesting topic, but it belongs elsewhere.
As your friendly list maintainer, I now officially ask that this discussion be
taken off-list.

To get back on track, how about some more war stories about the commercial SS
products out there? Pros and cons? Throughput performance? Interference problems?
I've had good success with 2.4 GHz WaveLAN units over a couple of 16 km (10 miles
for the metric-challenged) paths, but I'm about to try them over a shorter path
that is significantly obstructed by trees. I'd like to hear what others' experiences
have been at 915 MHz and 2.4 GHz over non-ideal paths. Anyone?

Barry

--
  Barry McLarnon VE3JF/VA3TCP | bm@hydra.carleton.ca
  Ottawa Amateur Radio Club | bm@lynx.ve3jf.ampr.org
  Packet Working Group | http://hydra.carleton.ca

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

28. [ss] RE: .PS and GPL

From: Lyle Johnson <johnson@mmsi.com>
Date: Fri, 07 May 1999 08:49:25 -0700
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-19616-1999.05.07-10.54.08--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Barry,

Last year I did some testing with 2.4 Ghz DSSS systems runing a power
level of 1 watt to vertically-polarized "omni" antennas with about 12i
dB gain. The location was a forest south of Perth, Australia.

The attenuation of the forest was about 10 dB/100 feet (or 30 meters for
the English challenged). This was not a precise measurement, but seemd
to be close and consistent.

The forest consisted of leafy trees, not pines (OK, dudaceous -- or
however you spell it -- not coniferous).

The radios were prototypes we built around the Harris PRISM chipset,
which has its own limitations.

The data was being sent at 1 Mbps, DPSK.

Here in the desert with the same setup, we obtained ranges comparable to
your 16 km/10 mile.

We also noted in Australia that rainfall had no discernable effect. (We
timed the trip to be in the rainy season.) Not to say there is zero
addiitonal attenuation, just that we were not able to see any
differences in range performance or measuered signal strengths.

Barry McLarnon VE3JF wrote:

> To get back on track, how about some more war stories about the commercial SS
> products out there? Pros and cons? Throughput performance? Interference problems?
> I've had good success with 2.4 GHz WaveLAN units over a couple of 16 km (10 miles
> for the metric-challenged) paths, but I'm about to try them over a shorter path
> that is significantly obstructed by trees. I'd like to hear what others' experiences
> have been at 915 MHz and 2.4 GHz over non-ideal paths. Anyone?

73,

Lyle

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

29. [ss] RE: .PS and GPL

From: "M.A.Pinfold" <Pinfold@xtra.co.nz>
Date: Sat, 08 May 1999 07:45:31 +1200
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-19647-1999.05.07-14.46.07--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Barry McLarnon VE3JF wrote:
>
> "Frederick M. Spinner" <fspinner@hotmail.com> wrote:
> > You HAVE to be kidding! Do you think the work of all of the programmers out
> > there on things like Linux FOR FREE was just some communist plot to destroy
> > the software industry? (Well maybe Microsoft, but that would be for the
> > common good!) Hell, most of the programmers on GPL projects are "legimate
> > software programmers" for their day jobs.
>
> [remainder of flame bait deleted]
>
> This is a perfect example of a message that should have gone in private email,
> not posted to this list. This is an interesting topic, but it belongs elsewhere.
> As your friendly list maintainer, I now officially ask that this discussion be
> taken off-list.
>
> To get back on track, how about some more war stories about the commercial SS
> products out there? Pros and cons? Throughput performance? Interference problems?
> I've had good success with 2.4 GHz WaveLAN units over a couple of 16 km (10 miles
> for the metric-challenged) paths, but I'm about to try them over a shorter path
> that is significantly obstructed by trees. I'd like to hear what others' experiences
> have been at 915 MHz and 2.4 GHz over non-ideal paths. Anyone?
>
> Barry
>
> --
>   Barry McLarnon VE3JF/VA3TCP | bm@hydra.carleton.ca
>   Ottawa Amateur Radio Club | bm@lynx.ve3jf.ampr.org
>   Packet Working Group | http://hydra.carleton.ca
>
> ---
> You are currently subscribed to ss as: PINFOLD@XTRA.CO.NZ
> To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org
Dear barry I have a pair of aironet 640 with 500 mW hyperamps 4 foot
dishes (i guess they do the work) over a fully obstructed path heaps of
big oak trees and accross town (3 Kms)to a slightly below the horizon
receiver I can sometimes get 2 Mbs but always 1 Mb .I guess sgs are
helped by knife edge refraction over tin roofs and the ignoring by dsss

of reflected time delayed sigs that helps?? running as apart of a 10 Mb
peer to peer lan. I think if I improve the dish feed performance (dipole
and reflector) to tubular radiator I may get enough improvement to run
2Mb consistantly   regards mike ZL1BTB

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To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

30. [ss] RE: Coding to beat turbo codes (STOP THIS THREAD).

From: rob <eagleyes@gis.net>
Date: Fri, 07 May 1999 15:57:26 -0400
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-19649-1999.05.07-15.06.57--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

f1usa wrote:

> Brett,
>
> You dislike .ps,
> You dislike good programs reading .ps,
> You dislike developers who spend a lot of time making free programs,
>
> I understand that's YOUR feeling,
> But it's YOUR war, definitely OFF TOPIC here.
>
> Regards from France.
>
> F1USA.
>
> ---
> You are currently subscribed to ss as: eagleyes@gis.net
> To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

---
You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

31. [ss] RE: Coding to beat turbo codes.

From: N8BLK@aol.com
Date: Fri, 7 May 1999 16:11:55 EDT
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-19650-1999.05.07-15.18.09--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

In a message dated 5/6/1999 21:19:38 PM Eastern Daylight Time,
bruce@westcut.com writes:

> Gentlemen -
> So WHERE IS the Postscript viewer for Windows95/98, that odesn't need to
be "
> made?" I looked ofr one a year ago or so and was very disappointed in what
I
> found. There seems to be a number of utilities for UNIX, but I have not
> found one for Windows that installs in the "usual" windows way?
>
> Comments?
There is the program combination of GSScript & GSView which will
allow you to read postcript files, and also pdf files among other things.
It's not freeware, but GNUware. It works!

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

32. [ss] 2.4 ISM range (was RE: .PS and GPL)

From: Jeremy Mcmillan <mcmillan@cboe.com>
Date: Fri, 7 May 1999 15:24:34 -0500
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-19651-1999.05.07-15.27.17--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I can get about 100 feet with Proxim RangeLan equipment: AP and the performance starts dropping off
considerably there. Part of the problem is CTS/RTS causes packets to queue, and multiple TCP sessions,

even with the MTU set to 350 (Proxim's optimal setting) seem to bring the network to a halt until everyone's retrys begin backing off. This is with the stock 0dB gain antenna.

I have no experience with the patch antenna sets. I do know that 2.4 is relatively intolerant of obstructions. The 915 MHz stuff is slower, but more reliable. It's been a while since I've used the RL1 stuff though. We use 904 MHz Aironet equipment right now, and the DSSS spreading seems to be tolerant enough of our noisy RF environment. We can connect through multiple floors and out in the courtyard with those.

Proxim RL2 XPR's are very high gain, and I hear even with the extra 7dB, you need the 18dB BreezeCom or 24dB BreezeCom vertical polaried dish antennae to make the jump. With trees, you want to calculate your Fresnel zone, because even with line-of-sight, your diffraction problem is going to depend on the terrain in and around that curve.

-----Original Message-----
From: Barry McLarnon VE3JF [SMTP:bm@lynx.ve3jf.ampr.org]
Sent: Friday, May 07, 1999 10:40 AM
To: TAPR Spread Spectrum Special Interest Group
Subject: [ss] RE: .PS and GPL

[flame bait deleted]
To get back on track, how about some more war stories about the commercial SS products out there? Pros and cons? Throughput performance? Interference problems? I've had good success with 2.4 GHz WaveLAN units over a couple of 16 km (10 miles for the metric-challenged) paths, but I'm about to try them over a shorter path that is significantly obstructed by trees. I'd like to hear what others' experiences have been at 915 MHz and 2.4 GHz over non-ideal paths. Anyone?

Barry

--
Barry McLarnon VE3JF/VA3TCP | bm@hydra.carleton.ca
Ottawa Amateur Radio Club | bm@lynx.ve3jf.ampr.org
Packet Working Group | http://hydra.carleton.ca

You are currently subscribed to ss as: mcmillan@cboe.com
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

33. [ss] Real-world SS Performance (Was: .PS and GPL)

From: Barry McLarnon VE3JF <bm@lynx.ve3jf.ampr.org>
Date: Fri, 7 May 1999 21:40:47 -0400 (EDT)
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-19682-1999.05.07-20.45.34--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Lyle Johnson <johnson@mmsi.com> wrote:
> Barry,
>
> Last year I did some testing with 2.4 Ghz DSSS systems runing a power
> level of 1 watt to vertically-polarized "omni" antennas with about 12i
> dB gain. The location was a forest south of Perth, Australia.
>
> The attenuation of the forest was about 10 dB/100 feet (or 30 meters for
> the English challenged). This was not a precise measurement, but seemd
> to be close and consistent.
>
> The forest consisted of leafy trees, not pines (OK, dudaceous -- or
> however you spell it -- not coniferous).
>
> The radios were prototypes we built around the Harris PRISM chipset,
> which has its own limitations.
>
> The data was being sent at 1 Mbps, DPSK.
>
> Here in the desert with the same setup, we obtained ranges comparable to
> your 16 km/10 mile.
>
> We also noted in Australia that rainfall had no discernable effect. (We
> timed the trip to be in the rainy season.) Not to say there is zero
> addiitonal attenuation, just that we were not able to see any
> differences in range performance or measuered signal strengths.

Thanks Lyle! Your observations seem to agree well with predictions in the literature. The CCIR (now ITU-R) estimate for attenuation from trees at 2.4 GHz is around 0.35 dB/m, or very close to 10 dB for 30 m (BTW, the predicted loss at 915 MHz would be about 4 dB less). Also, rain (and snow, fog, etc) is said to have little effect on path loss at 2.4 GHz and below.

I'm planning to measure the actual path loss on my tree-obstructed path, and I'll
report the results here. It won't be until after the annual Dayton madness next
weekend, though.

Barry

--
  Barry McLarnon VE3JF/VA3TCP | bm@hydra.carleton.ca
  Ottawa Amateur Radio Club | bm@lynx.ve3jf.ampr.org
  Packet Working Group | http://hydra.carleton.ca

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

34. [ss] RE: Real-world SS Performance (Was: .PS and GPL)

From: Dirk Koopman <djk@tobit.co.uk>
Date: Sat, 08 May 1999 10:34:50 +0100 (BST)
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-19729-1999.05.08-04.45.45--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I dunno about theory and so on but, as a practical demonstration, try
observing the difference in propagation between 2m and 70cms using boring old
FM voice.

We have a large lowland forest round where we live called Thetford Forest
(reputed to be the largest such in Western Europe), many leisure activities
(as well as the occasion emergency) requiring radio assistance take place in
this forest every year.

Empirically it has been found that low power (<=5w) 2m will penetrate the
"green sponge" (as it is known round hereabouts) even when wet, 70cms will
not (or at least, not very far - even in the dry).

Another thing that has been deployed around the forest is 1800Mhz GSM mobile
telephone systems, these too are noticably attenuated by the forest and made
completely useless by wet forest.

Dirk G1TLH

On 08-May-99 Barry McLarnon VE3JF wrote:
> Thanks Lyle! Your observations seem to agree well with predictions in the
> literature. The CCIR (now ITU-R) estimate for attenuation from trees at
> 2.4 GHz
> is around 0.35 dB/m, or very close to 10 dB for 30 m (BTW, the predicted
> loss
> at 915 MHz would be about 4 dB less). Also, rain (and snow, fog, etc) is
> said
> to have little effect on path loss at 2.4 GHz and below.
>
> I'm planning to measure the actual path loss on my tree-obstructed path,
> and
> I'll
> report the results here. It won't be until after the annual Dayton madness
> next
> weekend, though.

Dirk-Jan Koopman, Tobit Computer Co Ltd
At the source of every error which is blamed on the computer you will find
at least two human errors, including the error of blaming it on the computer.

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

35. [ss] RE: Coding to beat turbo codes

From: "Jim K." <jimbok@i-2000.com>
Date: Sat, 8 May 1999 15:42:50 -0400
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-19783-1999.05.08-14.44.47--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Hi,

    I'm a bit lost on why there seems to be a problem with .ps formats?   I
have been using it for quite some time (windows 98) and its fast and works
well! Can some one fill me in? (maybe private mail to get this off the
list) I just went to a web site and downloaded an Acrobat program,
installed it and ran it. How hard is that? I don't have a state of the art
computer and I have no complaints on the speed of it. To boot I am almost
always running an Mpeg3 decoder for audio files in the back round. (my
system is Pent 2, 400Mhz, SCSI, nothing great... just home made with off the
shelf parts)

Jim

 Jim Krutzler A.K.A. "Jimbo K"

 Home Page:
 http://www.i2.i-2000.com/~jimbok

 mailto:jimbok@i-2000.com   mailto:kb2uoi@amsat.org
 Ham Radio call: KB2UOI Phone/Fax 732.248.4479

 Attitude is Everything!

-----Original Message-----
From: Brett Glass <brett@lariat.org>
To: TAPR Spread Spectrum Special Interest Group <ss@lists.tapr.org>
Date: Friday, May 07, 1999 11:14 AM
Subject: [ss] RE: Coding to beat turbo codes

>At 09:39 AM 5/7/99 +0200, f1usa wrote:
>
>>Brett,
>>
>>You dislike .ps,
>
>Not a matter of dislike; I merely do not recommend the use of proprietary
>formats, of which PostScript is one. PostScript is slow, time-consuming,
>memory-intensive, and inconvenient.
>
>>You dislike good programs reading .ps,
>
>Haven't found any good ones. Again, dislike doesn't figure into this.
>
>>You dislike developers who spend a lot of time making free programs,
>
>No, I merely try to avoid supporting the agendas of Richard Stallman,
>who is unabashedly anti-business and seeks to destroy programmers'
>ability to profit from their work. But, again, that was an aside.
>
>What I was requesting, in my message, was that authors of scholarly
>papers publish them in a format which was current (PostScript dates
>to the mid-1980s and was not designed with the Internet in mind),
>non-proprietary (PostScript is still Adobe-proprietary, although
>it's been cloned), and convenient to read with a Web browser.
>
>--Brett Glass
>
>
>---
>You are currently subscribed to ss as: JIMBOK@I-2000.COM
>To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org
>

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

36. [ss] RE: Coding to beat turbo codes

From: Brett Glass <brett@lariat.org>
Date: Sat, 08 May 1999 13:49:37 -0600
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-19787-1999.05.08-14.54.38--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

The Acrobat Reader won't read PostScript. Adobe's latest proprietary product
isn't even compatible with its earlier one!

--Brett Glass

At 03:42 PM 5/8/99 -0400, Jim K. wrote:
>Hi,
>
>   I'm a bit lost on why there seems to be a problem with .ps formats?   I
>have been using it for quite some time (windows 98) and its fast and works
>well! Can some one fill me in? (maybe private mail to get this off the
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>installed it and ran it. How hard is that? I don't have a state of the art
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>always running an Mpeg3 decoder for audio files in the back round. (my
>system is Pent 2, 400Mhz, SCSI, nothing great... just home made with off the
>shelf parts)
>
>Jim
>
> Jim Krutzler A.K.A. "Jimbo K"
>
> Home Page:
> http://www.i2.i-2000.com/~jimbok
>
> mailto:jimbok@i-2000.com   mailto:kb2uoi@amsat.org
> Ham Radio call: KB2UOI Phone/Fax 732.248.4479
>
> Attitude is Everything!
>
>-----Original Message-----
>From: Brett Glass <brett@lariat.org>
>To: TAPR Spread Spectrum Special Interest Group <ss@lists.tapr.org>
>Date: Friday, May 07, 1999 11:14 AM
>Subject: [ss] RE: Coding to beat turbo codes
>
>
> >At 09:39 AM 5/7/99 +0200, f1usa wrote:
> >
> >>Brett,
> >>
> >>You dislike .ps,
> >
> >Not a matter of dislike; I merely do not recommend the use of proprietary
> >formats, of which PostScript is one. PostScript is slow, time-consuming,
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> >
> >>You dislike good programs reading .ps,
> >
> >Haven't found any good ones. Again, dislike doesn't figure into this.
> >
> >>You dislike developers who spend a lot of time making free programs,
> >
> >No, I merely try to avoid supporting the agendas of Richard Stallman,
> >who is unabashedly anti-business and seeks to destroy programmers'
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> >
> >What I was requesting, in my message, was that authors of scholarly
> >papers publish them in a format which was current (PostScript dates
> >to the mid-1980s and was not designed with the Internet in mind),
> >non-proprietary (PostScript is still Adobe-proprietary, although
> >it's been cloned), and convenient to read with a Web browser.
> >
> >--Brett Glass
> >
> >
> >---
> >You are currently subscribed to ss as: JIMBOK@I-2000.COM
> >To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org
> >
>
>
>---
>You are currently subscribed to ss as: BRETT@LARIAT.ORG
>To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

---
You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

37. [ss] RE: Coding to beat turbo codes

From: Steve Sampson <ssampson@usa-site.net>
Date: Sat, 8 May 1999 15:27:47 -0500 (CDT)
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-19792-1999.05.08-15.32.31--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Thanks for pointing that out Brett. You are a just a basket of information.
Alas, the information is completely worthless to the group, and you've
successfully caused us to unsubscribe from the noise.

Adios...

> The Acrobat Reader won't read PostScript. Adobe's latest proprietary product
> isn't even compatible with its earlier one!
>
> --Brett Glass

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

38. [ss] 2.4 ISM range, 5.x experience?

From: jk <zanzibar@zedat.fu-berlin.de>
Date: Sun, 9 May 1999 12:50:59 +0200
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-19884-1999.05.09-05.58.33--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Hi everybody,
I would be interested in experiences in the 5.x GHz range.
Has anybody ever run a Point to Multipoint in this spectrum?
How far can you go?
We ran a 2.4 Ghz and it is by no means tolerant to obstruction.
If there is a couple of trees in the way you can forget about the link.
The longest link we ever made was a 20K link with a handheld
24 Dbi parabolic grid which delivered 1MB/s.
jens

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

39. [ss] request for info about inficom

From: jk <zanzibar@zedat.fu-berlin.de>
Date: Sun, 9 May 1999 12:58:51 +0200
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-19885-1999.05.09-06.06.03--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Has anybody on the list ever tested the inficom equipment an can
tell something about it?
www.inficom.com
They say 902- 928 mhz and no line of sight needed.
Goes 10 miles with built in antenna and offers up to 25 MB/s on an ATM
interface.
Would be nice if it is true ;-)
jens

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

40. [ss] Re: request for info about inficom

From: Jake Janovetz <janovetz@tempest.ece.uiuc.edu>
Date: Sun, 9 May 1999 08:39:35 -0500
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-19895-1999.05.09-08.48.35--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Well, I haven't looked at the page yet, but how can they promise
25MB/s on 25MHz of bandwidth? Even 25Mbps would provide no
overhead for spreading (as I recall, a minimum coding gain of
11 is required).

   Cheers,
   Jake

On Sun, May 09, 1999 at 12:58:51PM +0200, jk wrote:
> Has anybody on the list ever tested the inficom equipment an can
> tell something about it?
> www.inficom.com
> They say 902- 928 mhz and no line of sight needed.
> Goes 10 miles with built in antenna and offers up to 25 MB/s on an ATM
> interface.
> Would be nice if it is true ;-)
> jens
>
> ---
> You are currently subscribed to ss as: JANOVETZ@UIUC.EDU
> To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

--
   janovetz@uiuc.edu | Once you have flown, you will walk the earth with
 University of Illinois | your eyes turned skyward, for there you have been,
                        | there you long to return.   -- da Vinci
        PP-ASEL | http://www.ews.uiuc.edu/~janovetz/index.html

---
You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

41. [ss] RE: request for info about inficom

From: "Ricardo A. Ghigliazza" <rick@radiomodem.com>
Date: Mon, 10 May 1999 14:14:55 -0300
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-19923-1999.05.09-12.23.11--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I have sent a lot of emails and faxs to this company, inficom, but i never
get a reply, i decided later for WaveAccess equipments.

Regards,

Ricardo

----- Original Message -----
From: jk <zanzibar@zedat.fu-berlin.de>
To: TAPR Spread Spectrum Special Interest Group <ss@lists.tapr.org>
Sent: Sunday, May 09, 1999 7:58 AM
Subject: [ss] request for info about inficom

> Has anybody on the list ever tested the inficom equipment an can
> tell something about it?
> www.inficom.com
> They say 902- 928 mhz and no line of sight needed.
> Goes 10 miles with built in antenna and offers up to 25 MB/s on an ATM
> interface.
> Would be nice if it is true ;-)
> jens
>
> ---
> You are currently subscribed to ss as: RICK@RADIOMODEM.COM
> To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org
>
>
>

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

42. [ss] Re: request for info about inficom

From: "Ricardo A. Ghigliazza" <rick@radiomodem.com>
Date: Mon, 10 May 1999 14:47:32 -0300
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-19927-1999.05.09-12.55.32--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

For information off all, my interest in wireless promoted my to install a
website in www.radiomodem.com, i hope that we can make the site better if
all help, i don´t have to much time to dedicate to the site, but, is open to
all.

Regards,
Ricardo

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

43. [ss] Orcad/Xilinx Schematic Entry and VHDL compiler EVALUATION available

From: "Quentin Conner" <quentin@qns.net>
Date: Sun, 9 May 1999 16:01:10 -0500
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-19942-1999.05.09-16.04.55--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

This is not meant to be a commercial solicitation so please hold your
flames.

I received a flyer in the mail friday for an evaluation CDROM from Orcad
and Xilinx. The software is supposed to include Orcad Express Release
9,
crippled of course. The limitation is 30 parts in schematic entry, 100
lines VHDL simulation, and 30 pins logic synthesis.

To request the evaluation, see http://www.vhdlnow.com

Hopefully this information will be of use to other HAMs who like to
experiment. If nothing else it is a cheap way to learn VHDL.

Regards,

Quentin

--
Quentin Conner -- KC5VYH
http://www.qns.com/~quentin
QNSnet -- public Internet access for Oklahoma
mailto:info@qns.com
5900 Mosteller Dr #1500, OKC, OK 73112 405.848.3228
http://www.qns.net

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

44. [ss] RE: Real-world SS Performance (Was: .PS and GPL)

From: Barry McLarnon VE3JF <bm@lynx.ve3jf.ampr.org>
Date: Sun, 9 May 1999 20:00:17 -0400 (EDT)
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-20007-1999.05.09-19.05.14--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Dirk Koopman <djk@tobit.co.uk> wrote:
> I dunno about theory and so on but, as a practical demonstration, try
> observing the difference in propagation between 2m and 70cms using boring old
> FM voice.
>
> We have a large lowland forest round where we live called Thetford Forest
> (reputed to be the largest such in Western Europe), many leisure activities
> (as well as the occasion emergency) requiring radio assistance take place in
> this forest every year.
>
> Empirically it has been found that low power (<=5w) 2m will penetrate the
> "green sponge" (as it is known round hereabouts) even when wet, 70cms will
> not (or at least, not very far - even in the dry).

While the losses due to trees probably are higher at 70 cm than 2m, that's not
the whole story. Don't forget that you also have to account for the decreased
effective aperture of the antennas at the higher frequency. Assuming that
you're trying to communicate between handhelds that have the same power output
and quarter-wave whips on each band, the 70 cm receivers will have nearly
10 dB less power delivered to their inputs than the 2 m receivers will, on a
line-of-sight path. You could use higher-gain omni antennas on the 70 cm units
to overcome this disadvantage, but this makes them finicky for positioning due
to the narrow vertical beamwidth. It's easy to overcome this problem on fixed
links with higher-gain directional antennas, though.

> Another thing that has been deployed around the forest is 1800Mhz GSM mobile
> telephone systems, these too are noticably attenuated by the forest and made
> completely useless by wet forest.

Yep, this is certainly a disadvantage of the upward push to find available spectrum
for mobile communications - too bad the TV broadcasters have most of the best
spectrum for mobile locked up! Whatever happened to the "Negroponte flip"? ;-)

Barry

--
  Barry McLarnon VE3JF/VA3TCP | bm@hydra.carleton.ca
  Ottawa Amateur Radio Club | bm@lynx.ve3jf.ampr.org
  Packet Working Group | http://hydra.carleton.ca

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

45. [ss] Re: request for info about inficom

From: Barry McLarnon VE3JF <bm@lynx.ve3jf.ampr.org>
Date: Sun, 9 May 1999 23:37:09 -0400 (EDT)
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-20036-1999.05.09-22.41.58--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Jake Janovetz <janovetz@tempest.ece.uiuc.edu> wrote:
> Well, I haven't looked at the page yet, but how can they promise
> 25MB/s on 25MHz of bandwidth? Even 25Mbps would provide no
> overhead for spreading (as I recall, a minimum coding gain of
> 11 is required).

Well, they could be using some exotic multi-level modulation scheme
(like 256QAM) to get more bps/Hz before spreading. But in this case, I
think the answer is simpler: it's vaporhardware. From what I've heard,
Inficom sells franchises rather than hardware.

Barry

--
  Barry McLarnon VE3JF/VA3TCP | bm@hydra.carleton.ca
  Ottawa Amateur Radio Club | bm@lynx.ve3jf.ampr.org
  Packet Working Group | http://hydra.carleton.ca

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

46. [ss] Re: ss digest: May 09, 1999

From: Roger Boggs <rogerboggs@csi.com>
Date: Mon, 10 May 1999 5:38:32 -0500
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-20068-1999.05.10-04.47.17--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Subject: Re: request for info about inficom
From: roger@overlan.com (C-Spec Corporation)
Date: 5-10-99

I, too, was curious when I saw their page, but mostly skeptical about their claims.
Seemed that they had found ways to defy the laws of physics and I wanted to know
they did it. After several dozen e-mails and calls to the number posted on their web page, I
finally had someone from Inficom call me. I asked him several times how the system worked
and he kept telling me that I wouldn't understand it. I asked how the equipment could defy
basic rules of RF propagation and again was told that I couldn't possibly understand how
they did it because I wouldn't stop thinking in normal terms.

I asked to stay on their mailing lists so that I'd have some interesting jokes to send around to
fellow engineers once in a while.

Roger Boggs
C-Spec Corporation
www.overlan.com

At 5/10/99, you wrote:
>
>TAPR Spread Spectrum Special Interest Group Digest for Sunday, May 09, 1999.

>
>1. 2.4 ISM range, 5.x experience?
>2. request for info about inficom
>3. Re: request for info about inficom
>4. RE: request for info about inficom
>5. Re: request for info about inficom
>6. Orcad/Xilinx Schematic Entry and VHDL compiler EVALUATION available
>7. RE: Real-world SS Performance (Was: .PS and GPL)
>8. Re: request for info about inficom
>
>--
>
>Subject: 2.4 ISM range, 5.x experience?
>From: jk <zanzibar@zedat.fu-berlin.de>
>Date: Sun, 9 May 1999 12:50:59 +0200
>X-Message-Number: 1
>
>Hi everybody,
>I would be interested in experiences in the 5.x GHz range.
>Has anybody ever run a Point to Multipoint in this spectrum?
>How far can you go?
>We ran a 2.4 Ghz and it is by no means tolerant to obstruction.
>If there is a couple of trees in the way you can forget about the link.
>The longest link we ever made was a 20K link with a handheld
>24 Dbi parabolic grid which delivered 1MB/s.
>jens
>
>--
>
>Subject: request for info about inficom
>From: jk <zanzibar@zedat.fu-berlin.de>
>Date: Sun, 9 May 1999 12:58:51 +0200
>X-Message-Number: 2
>
>Has anybody on the list ever tested the inficom equipment an can
>tell something about it?
>www.inficom.com
>They say 902- 928 mhz and no line of sight needed.
>Goes 10 miles with built in antenna and offers up to 25 MB/s on an ATM
>interface.
>Would be nice if it is true ;-)
>jens
>
>--
>
>Subject: Re: request for info about inficom
>From: Jake Janovetz <janovetz@tempest.ece.uiuc.edu>
>Date: Sun, 9 May 1999 08:39:35 -0500
>X-Message-Number: 3
>
>Well, I haven't looked at the page yet, but how can they promise
>25MB/s on 25MHz of bandwidth? Even 25Mbps would provide no
>overhead for spreading (as I recall, a minimum coding gain of
>11 is required).
>
>   Cheers,
>   Jake
>
>
>On Sun, May 09, 1999 at 12:58:51PM +0200, jk wrote:
>> Has anybody on the list ever tested the inficom equipment an can
>> tell something about it?
>> www.inficom.com
>> They say 902- 928 mhz and no line of sight needed.
>> Goes 10 miles with built in antenna and offers up to 25 MB/s on an ATM
>> interface.
>> Would be nice if it is true ;-)
>> jens
>>
>> ---
>> You are currently subscribed to ss as: JANOVETZ@UIUC.EDU
>> To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org
>
>--
>   janovetz@uiuc.edu | Once you have flown, you will walk the earth with
> University of Illinois | your eyes turned skyward, for there you have been,
> | there you long to return.   -- da Vinci
>   PP-ASEL | http://www.ews.uiuc.edu/~janovetz/index.html
>

>--
>
>Subject: RE: request for info about inficom
>From: "Ricardo A. Ghigliazza" <rick@radiomodem.com>
>Date: Mon, 10 May 1999 14:14:55 -0300
>X-Message-Number: 4
>
>I have sent a lot of emails and faxs to this company, inficom, but i never
>get a reply, i decided later for WaveAccess equipments.
>
>Regards,
>
>Ricardo
>
>
>----- Original Message -----
>From: jk <zanzibar@zedat.fu-berlin.de>
>To: TAPR Spread Spectrum Special Interest Group <ss@lists.tapr.org>
>Sent: Sunday, May 09, 1999 7:58 AM
>Subject: [ss] request for info about inficom
>
>
>> Has anybody on the list ever tested the inficom equipment an can
>> tell something about it?
>> www.inficom.com
>> They say 902- 928 mhz and no line of sight needed.
>> Goes 10 miles with built in antenna and offers up to 25 MB/s on an ATM
>> interface.
>> Would be nice if it is true ;-)
>> jens
>>
>> ---
>> You are currently subscribed to ss as: RICK@RADIOMODEM.COM
>> To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org
>>
>>
>>
>
>
>--
>
>Subject: Re: request for info about inficom
>From: "Ricardo A. Ghigliazza" <rick@radiomodem.com>
>Date: Mon, 10 May 1999 14:47:32 -0300
>X-Message-Number: 5
>
>For information off all, my interest in wireless promoted my to install a
>website in www.radiomodem.com, i hope that we can make the site better if
>all help, i don=B4t have to much time to dedicate to the site, but, is op=
>en to
>all.
>
>Regards,
>Ricardo
>
>
>
>--
>
>Subject: Orcad/Xilinx Schematic Entry and VHDL compiler EVALUATION available
>From: "Quentin Conner" <quentin@qns.net>
>Date: Sun, 9 May 1999 16:01:10 -0500
>X-Message-Number: 6
>
>
>This is not meant to be a commercial solicitation so please hold your
>flames.
>
>I received a flyer in the mail friday for an evaluation CDROM from Orcad
>and Xilinx. The software is supposed to include Orcad Express Release
>9,
>crippled of course. The limitation is 30 parts in schematic entry, 100
>lines VHDL simulation, and 30 pins logic synthesis.
>
>To request the evaluation, see http://www.vhdlnow.com
>
>Hopefully this information will be of use to other HAMs who like to
>experiment. If nothing else it is a cheap way to learn VHDL.
>

>Regards,
>
>Quentin
>
>--
>Quentin Conner -- KC5VYH
>http://www.qns.com/~quentin
>QNSnet -- public Internet access for Oklahoma
>mailto:info@qns.com
>5900 Mosteller Dr #1500, OKC, OK 73112 405.848.3228
>http://www.qns.net
>
>
>--
>
>Subject: RE: Real-world SS Performance (Was: .PS and GPL)
>From: Barry McLarnon VE3JF <bm@lynx.ve3jf.ampr.org>
>Date: Sun, 9 May 1999 20:00:17 -0400 (EDT)
>X-Message-Number: 7
>
>Dirk Koopman <djk@tobit.co.uk> wrote:
>> I dunno about theory and so on but, as a practical demonstration, try
>> observing the difference in propagation between 2m and 70cms using boring old
>> FM voice.
>>
>> We have a large lowland forest round where we live called Thetford Forest
>> (reputed to be the largest such in Western Europe), many leisure activities
>> (as well as the occasion emergency) requiring radio assistance take place in
>> this forest every year.
>>
>> Empirically it has been found that low power (<=5w) 2m will penetrate the
>> "green sponge" (as it is known round hereabouts) even when wet, 70cms will
>> not (or at least, not very far - even in the dry).
>
>While the losses due to trees probably are higher at 70 cm than 2m, that's not
>the whole story. Don't forget that you also have to account for the decreased
>effective aperture of the antennas at the higher frequency. Assuming that
>you're trying to communicate between handhelds that have the same power output
>and quarter-wave whips on each band, the 70 cm receivers will have nearly
>10 dB less power delivered to their inputs than the 2 m receivers will, on a
>line-of-sight path. You could use higher-gain omni antennas on the 70 cm units
>to overcome this disadvantage, but this makes them finicky for positioning due
>to the narrow vertical beamwidth. It's easy to overcome this problem on fixed
>links with higher-gain directional antennas, though.
>
>> Another thing that has been deployed around the forest is 1800Mhz GSM mobile
>> telephone systems, these too are noticably attenuated by the forest and made
>> completely useless by wet forest.
>
>Yep, this is certainly a disadvantage of the upward push to find available spectrum
>for mobile communications - too bad the TV broadcasters have most of the best
>spectrum for mobile locked up! Whatever happened to the "Negroponte flip"? ;-)
>
>Barry
>
>
>--
> Barry McLarnon VE3JF/VA3TCP | bm@hydra.carleton.ca
> Ottawa Amateur Radio Club | bm@lynx.ve3jf.ampr.org
> Packet Working Group | http://hydra.carleton.ca
>
>--
>
>Subject: Re: request for info about inficom
>From: Barry McLarnon VE3JF <bm@lynx.ve3jf.ampr.org>
>Date: Sun, 9 May 1999 23:37:09 -0400 (EDT)
>X-Message-Number: 8
>
>Jake Janovetz <janovetz@tempest.ece.uiuc.edu> wrote:
>> Well, I haven't looked at the page yet, but how can they promise
>> 25MB/s on 25MHz of bandwidth? Even 25Mbps would provide no
>> overhead for spreading (as I recall, a minimum coding gain of
>> 11 is required).
>
>Well, they could be using some exotic multi-level modulation scheme
>(like 256QAM) to get more bps/Hz before spreading. But in this case, I
>think the answer is simpler: it's vaporhardware. From what I've heard,
>Inficom sells franchises rather than hardware.
>

>Barry
>
>
>--
> Barry McLarnon VE3JF/VA3TCP | bm@hydra.carleton.ca
> Ottawa Amateur Radio Club | bm@lynx.ve3jf.ampr.org
> Packet Working Group | http://hydra.carleton.ca
>
>
>
>---
>
>END OF DIGEST
>
>---
>You are currently subscribed to ss as: ROGER@C-SPEC.COM
>To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org
>
>
>

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

47. [ss] Re: request for info about inficom

From: Jake Janovetz <janovetz@tempest.ece.uiuc.edu>
Date: Mon, 10 May 1999 08:27:57 -0500
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-20092-1999.05.10-08.37.06--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Not on RF... They'd have a pretty tough time getting any
more than, say 16-QAM going. Is Internet false advertising legal?

   Cheers,
   Jake

On Sun, May 09, 1999 at 11:37:09PM -0400, Barry McLarnon VE3JF wrote:
> Jake Janovetz <janovetz@tempest.ece.uiuc.edu> wrote:
> > Well, I haven't looked at the page yet, but how can they promise
> > 25MB/s on 25MHz of bandwidth? Even 25Mbps would provide no
> > overhead for spreading (as I recall, a minimum coding gain of
> > 11 is required).
>
> Well, they could be using some exotic multi-level modulation scheme
> (like 256QAM) to get more bps/Hz before spreading. But in this case, I
> think the answer is simpler: it's vaporhardware. From what I've heard,
> Inficom sells franchises rather than hardware.
>
> Barry
>
>
> --
>   Barry McLarnon VE3JF/VA3TCP | bm@hydra.carleton.ca
>   Ottawa Amateur Radio Club | bm@lynx.ve3jf.ampr.org
>   Packet Working Group | http://hydra.carleton.ca
>
> ---
> You are currently subscribed to ss as: JANOVETZ@UIUC.EDU
> To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

--
   janovetz@uiuc.edu | Once you have flown, you will walk the earth with
 University of Illinois | your eyes turned skyward, for there you have been,
                        | there you long to return.   -- da Vinci
        PP-ASEL | http://www.ews.uiuc.edu/~janovetz/index.html

---
You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

48. [ss] TAPR Dayton Activities 1999

From: Greg Jones <wd5ivd@tapr.org>
Date: Tue, 11 May 1999 21:54:45 -0500
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-20443-1999.05.11-22.33.37--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

TAPR Dayton Activities 1999
for details visit: http://www.tapr.org/tapr/html/Fdayton.html

We will be at our normal booth spaces (542 & 543)
Come on by and say hi!

Friday Morning - TAPR Digital Forum
Friday Evening - TAPR PACK*BASH

TAPR Digital Forum on Friday

The schedule for the TAPR digital forum is:

10:00 - 10:05am (5 min)
Introduction to Forum, John Ackermann, N8UR

10:05 - 10:30am (25min)
TAPR Update, Greg Jones, WD5IVD

10:30 - 11:00am (30 min)
Linux AX.25 Update, John Ackermann, N8UR

11:00 - 11:30am (30 min)
PIC Development Update, Steve Bible, N7HPR and John Hansen, W2FS

11:30 - 12:00noon (30 min)
GPS Projects, Steve Bible, N7HPR

12:00noon - 12:30pm (30 min)
Compact Flash Card Project, John Koster, W9DDD

12:30 - 1:00pm (30 min)
TAPR APRS News, Steve Dimse, K4HG and Stan Horzepa, WA1LOU

1:00pm - 1:45pm (45 min)
FHSS Radio Project Update, Tom McDermott, N5EG

Attending the 1999 Dayton Hamvention? Then don't miss out on PACK*BASH!

What?

An event for the digitally-inclined ham, featuring:

* Buffet dinner
* "A Little Technology Goes a Long Way" -- Keynote address
  by Dave Pederson, N7BHC
* TAPR special interest group meetings
* "Birds of a Feather" gatherings

When?

Friday evening, May 14, 1999
Doors open at 7:00 pm; dinner served at 7:30 pm
Speaker and meetings after dinner

Where?

NCR "Sugarcamp" Conference Center, 101 W. Schantz Ave. --
South of downtown Dayton, just west of Main St. (Rt 48).
Maps available on the TAPR web site (www.tapr.org) or at the
TAPR booth.

How?

Dinner requires advance registration and payment through TAPR.
Tickets will be available at the TAPR booth on Friday. The cost
is $20.00 per person, tax and tip included.

All amateurs are welcome to attend, enjoy the speaker, and
particpate in the meetings, although only those purchasing a
dinner can eat.

Who?

PACK*BASH is co-sponsored by TAPR -- Tucson Amateur Packet
Radio, the national leader in digital communication -- and the
Miami Valley FM Association, Dayton's packet radio club.

For more information (including maps), go to
http://www.tapr.org/tapr/html/dayton.html,
or send email to tapr@tapr.org.

Greg Jones, WD5IVD Austin, Texas
wd5ivd@tapr.org http://www.tapr.org/~wd5ivd

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

49. [ss] Effect of Sandstorms on 2.4GHz propagation

From: "Roger Boggs" <ROGER@overlan.com>
Date: Fri, 21 May 1999 8:5:55
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-21888-1999.05.21-08.11.13--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Has anyone had any experience with 2.4GHz DSSS signals in sandstorms?
Considering deploying some equipment in Middle East and haven't really
heard of anyone who's looked at how much sandstorms can fade a link.
Comments or pointers to references would be greatly appreciated.

Roger Boggs
C-Spec Corp
www.overlan.com

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50. [ss] Re: Effect of Sandstorms on 2.4GHz propagation

From: Brett Glass <brett@lariat.org>
Date: Fri, 21 May 1999 13:53:06 -0600
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-21932-1999.05.21-15.03.47--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Water would do much worse. Your big problem would be damage to the antenna.

--Brett

At 08:05 AM 5/21/99 +0000, Roger Boggs wrote:
>Has anyone had any experience with 2.4GHz DSSS signals in sandstorms?
>Considering deploying some equipment in Middle East and haven't really
>heard of anyone who's looked at how much sandstorms can fade a link.
>Comments or pointers to references would be greatly appreciated.
>
>Roger Boggs
>C-Spec Corp
>www.overlan.com
>
>---
>You are currently subscribed to ss as: BRETT@LARIAT.ORG
>To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

---
You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

51. [ss] Symphony and Linux 2.2.X

From: "Plamen Ganev" <pganev@com-it.net>
Date: Fri, 28 May 1999 10:46:54 +0200
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-23064-1999.05.28-03.54.15--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

This might be better asked in a Linux group but....I realy need some help.

Anyone using the Proxim Symphony drivers in a Linux 2.2.X box?

I managed to "patch" a 1.5.0beta4 driver to compile in linux 2.2.5, but it won't work (crashes the kernel and CPU in double fault!)

Any help would be greatly appreciated.

Thanx,
Plamen

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

52. [ss] Re: Symphony and Linux 2.2.X

From: "Scott C. Best" <sbest00@svpal.org>
Date: Fri, 28 May 1999 09:57:20 -0700 (PDT)
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-23133-1999.05.28-12.03.13--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Plamen:
        Try a visit to:

http://www-uk.hpl.hp.com/people/jt/Linux/Linux.Wireless.drivers.html

        Great list.

-Scott

On Fri, 28 May 1999, Plamen Ganev wrote:

> This might be better asked in a Linux group but....I realy need some help.
>
> Anyone using the Proxim Symphony drivers in a Linux 2.2.X box?
>
> I managed to "patch" a 1.5.0beta4 driver to compile in linux 2.2.5, but it won't work (crashes the kernel and CPU in double fault!)
>
> Any help would be greatly appreciated.
>
> Thanx,
> Plamen

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To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

53. [ss] 1999 TAPR Digital Forum @ HamVention

From: Greg Jones <wd5ivd@tapr.org>
Date: Mon, 31 May 1999 13:14:11 -0500
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-23586-1999.05.31-13.22.34--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

The audio from the TAPR Digital Forum held during the 1999 Dayton
Hamvention is now available for listening. If you couldn't make the forum
this year, you can catch up on all the talks.

http://www.tapr.org/tapr/html/Fdayton99.html

Welcome to the TAPR Digital Forum
              John Ackermann, AG9V, Forum Moderator

TAPR Kit/Project/Organizational Update
              Greg Jones, WD5IVD (www)

Linux AX.25
              John Ackermann, N8UR

PIC-E Developments
              Steve Bible, N7HPR (www) and John Hanson, W2FS

GPS Projects
              Steve Bible, N7HPR (www)

Compact Flash Adapter

John Koster, W9DDD

APRS Update
Steve Dimse, K4HG and Stan Horzepa, WA1LOU

TAPR 900Mhz FHSS Radio Project
Tom McDermott, N5EG

in addition Dave Pedersen, N7BHC, talk on "A Little Technology Goes a Long Way" during the TAPR PacketBASH on Friday is available.

Cheers - Greg Jones, WD5IVD

Tucson Amateur Packet Radio
8987-309 E Tanque Verde Rd #337 * Tucson, Az * 85749-9399
---
e-mail: tapr@tapr.org web: <http://www.tapr.org/>
ftp: ftp.tapr.org
phone: 940-383-0000 fax: 940-565-2544

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July 1999

Original source file: ss.9907
Source: http://ftp.tapr.org/tapr_history/SIG_Archives/spread-spectrum-sig/mail_archive/ss.9907

1. [ss] 1999 ARRL and TAPR Digital Communications Conference

From: Greg Jones <wd5ivd@tapr.org>
Date: Thu, 1 Jul 1999 14:00:26 -0500
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-28281-1999.07.01-14.10.39--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

1999 ARRL and TAPR Digital Communications Conference
September 24-26, 1999
Phoenix, Arizona

Web: http://www.tapr.org/dcc

It's that time again! Time to start making your travel plans and
thinking about what to publish for the upcoming 18th Annual ARRL
and TAPR Digital Communications Conference.

The 1999 ARRL and TAPR Digital Communications Conference will
be held September 24-26, 1999 in Phoenix, Arizona. This year's
conference location is just minutes away from the Phoenix Sky Harbor
International Airport (PHX).

For full details on the conference, refer to the web page listed above.

Contact TAPR to register for the DCC:

Tucson Amateur Packet Radio
8987-309 E. Tanque Verde Road #337
Tucson, AZ 85749-9399.
phone 940-383-0000, fax 940-566-2544
e-mail tapr@tapr.org, browse http://www.tapr.org

Greg Jones, WD5IVD Austin, Texas
wd5ivd@tapr.org http://www.tapr.org/~wd5ivd

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2. [ss] Informations...

From: iw3skw@s55tcp.ampr.org
Date: Sat, 03 Jul 99 14:10:34 EDT
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-28498-1999.07.03-09.18.56--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Hi, I'm very interessed to have news about spread specrum comunications, I'm an
Italian hamradio student of engenneering at Univeristy of UDINE, if is possible
I wont to suscribe to your news-group.
My E-Mail addres is : iw3skw@s55tcp.ampr.org
Name, surname: Stefano Parusso
Country : Italy (Zone 3)
best '73
IW3SKW op. Stefano

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

3. [ss] New Search Engine Online

From: wharrell@surfsouth.com
Date: Sat, 3 Jul 1999 00:06:35 +0000
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-28515-1999.07.03-13.43.01--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Hello to all,

I need your help to continue building the new Search Engine Database
at www.hamfind.com

Please add any url that you are responsible for. Perhaps you would
even consider a graphic link to our search to help spread the word
and help your vistors out.

I look forward to seeing your url added.

Happy 4th Holiday..

Wayne Harrell
www.hamfind.com
Wayne Harrell
Georgia WEB Services
wharrell@surfsouth.com

http://www.surfsouth.com/~wharrell = WD4LYV'S WEB Site
http://www.surfsouth.com/~wharrell/fest = Sunbelt Hamfest

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4. [ss] Re: [aprssig] Re: IMPORTANT TO READ...NO MORE 2 meters,etc. for digital?

From: Greg Jones <wd5ivd@tapr.org>
Date: Sun, 4 Jul 1999 12:31:51 -0500
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Cc: "NETSIG list mailing"<netsig@tapr.org>,
" Spread Spectrum "<ss@tapr.org>, " fcc "<fccreg@tapr.org>
Message-ID: <LYR6751-28613-1999.07.04-12.43.13--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Steve is correct. This is a very important PRM to read, consider, and
comment on.

I have placed the pdf file in question, in my web area for easier access:
http://www.tapr.org/~wd5ivd/RM-9673.pdf
I urge all of you reading this message to go grab the NPRM and read it.

This has been in the works for sometime now and is actually an off sprout
of the Spread Spectrum rule making that TAPR has been pushing. I was aware
that Bill Tynan was working on this over a year ago. There are two major
sides to this. The NPRM reflects the side that basically wants band
segment plans defined in the rules and the other side feels that we can't
limit the nature of operations on the amateur bands so as to allow the most
utilization of the spectrum as possible now and in the future, since
technology and people who use it change with time. Once something gets
into the rules, the spectrum is stuck. Once the spectrum is locked in
place, we lose one of the greatest advantages of amateur radio, that of
large segments of contiguous spectrum. If we continue to further segment
our own spectrum, we only further reduce the usage on these segments and
make it easier for someone to say that our bands are under utilized and
therefore they should be placed into the commercial sector. A very
difficult position which we would be hard pressed to defend.

This is a VERY DANGEROUS slope we face if the FCC goes ahead with this
NPRM. Bandwidth in the amateur radio bands must remain open to its usage
and not be further segmented within the community. Their are already rules
in the regulations that keep people from interfering with each other, and
trying to set up band plans in Part 97 is a big mistake and will impact
amateur radio very negatively for a long time maybe even permanently.

This seems all very harmless and might look like something many of you can
support, but the down side that isn't explained is that once rules get
enacted in Part 97 it literally takes many years to get something changed
again. Take the Spread Spectrum rule making TAPR started to work on in
1994 (yes 94). Here it is 5+ years later and the FCC has the basic wording
defined, but it still sits someplace waiting to finally get put before the
commissioners to get signed. Until these rules do get signed we are still
burdened with SS rules written in the early 80's (approaching 20 years
old). This could easily happen with this PRM. It might pass and in ten
years we might need to be operating different modes, which would not be
acceptable with the rules changes suggested in this PRM.

The basic premise is that the amateur radio bands should be non-restrictive
so that the spectrum benefits the most people. Hams should be trained well
enough to know where they should operate to be in good amateur radio
operating practice. While there are some that ignore good practice and
operate where they want, creating additional rules in the Part 97 will not
stop these poor operators, but it will impact those of us that do follow
the rules and amateur radio as a whole in order to benefit a specific
sub-group within our hobby.

Greg Jones, WD5IVD

>On 7/4/99 5:49 AM Dan Quigley (danq@quigleys.com) wrote:
>
>>>"The FCC has assigned RM-9673 to a petition by the Central States
>>> VHF Society, Inc., seeking generally more restrictive regulation of the
>>> modes used by amateurs in the 6 m, 2 m, 1.25 m, and 70 cm bands. ...
>
>>After reading through this I don't think it is out of line or sets any
>>dangerous precedent and will support it.
>>
>Read it again. The actual proposal is to eliminate all data from
>50.1-54.0 and 144.1-148 MHz! Yes, what the text discussion implies and
>the actual proposed changes in Appendix A say are different, and maybe it
>is just an error. However, if I were the CSVHFS making a proposal to the
>FCC, I'd be darned sure the proposal said what I mean. The fact that they
>ADD data to the 50 to 50.1 and 144 to 144.1 segments (currently CW only)
>makes me think this might not be an error. Also, since they explicitly
>state that no changes are proposed for unlisted segments, the fact that
>they list each segment of the band makes me believe they mean to make
>changes outside of the 50.1 to 50.3 and 144.1 to 144.3 areas of their
>stated interest.
>
>Regardless of their motives and any possible error, there IS a proposal
>now before the FCC that would eliminate data from all but a tiny segment
>of the 2 meter and 6 meter bands.
>
>If it is an error, if all they were asking for is protection in the 50.1
>to 50.3 and 144.1 to 144.3 segments, I could support it. However, they
>also explicitly wish to eliminate all test activity below 222 MHz, which
>is something I cannot support. The ability to experiment is central to
>amateur radio, and that ability must be maintained.
>
>>2) The petition is introduced with a supporting letter from Bill Tynan
>>(W3X0) Chairman of AMSAT-NA.
>>
>Yes, but acting in his position of Chairman of the Government Liason
>Committee of CSVHFS, not his AMSAT-NA hat.
>
>Steve K4HG

Greg Jones, WD5IVD   Austin, Texas
wd5ivd@tapr.org   http://www.tapr.org/~wd5ivd

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5. [ss] Re: [aprssig] Re: IMPORTANT TO READ...NO MORE 2 meters,etc. for digital?

From: Greg Jones <wd5ivd@tapr.org>
Date: Sun, 4 Jul 1999 12:42:21 -0500
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Cc: "NETSIG list   mailing"<netsig@tapr.org>,
        " Spread Spectrum "<ss@tapr.org>
Message-ID: <LYR6751-28617-1999.07.04-12.50.23--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

The next step is for everyone to file on the issue. Don't wait for TAPR to
file. The FCC listens to number of filings -- not just the quality. So,
the more people who file the better.

I am attaching a simple outline that will help anyone that wants to file.

Cheers - Greg

>On 7/3/99 10:39 AM Doug Obenchain (dobencha@netusa1.net) wrote:
>

>>Yes I agree the text of the document says it all. So what is the next step
>>on our part, what kind of strength does TAPR have in protesting this?
>>
>I'm sure the Board of Directors will formulate and file a response to
>this. This will take at least a few days, since we just found out now
>along with all of you.
>
>Steve K4HG
>

There is a format for filing. If you have filed before,
then you have a format you like, but for those that want to jump in I'll
include an example outline below.

Note: I don't provide any words for you to use -- I don't believe in
sending out example filings for people to copy and mail in. While the
effort is sometimes well placed, people seem to just copy it without
actually putting it in their own words -- which the FCC sees and sometimes
just counts as one filing instead of many. You have to take the time and
learn just a little and write about the issues important to you.

If you are looking for a format or how other have done it, you can look at
the Spread Spectrum rule making on the TAPR SS web page
(http://www.tapr.org/ss/rule_changes.html).

It is almost as important to file in the correct format as to make your
point. You don't have to write
lots of page for a good filing either. Some of the best ones are just a
a page or two long. What I have below is simple enough. Tell the FCC who you
are and a little about yourself and why you are filing. Tell them what you
Tell them what you like or don't link about the proposed rule making.
Then say sign your name.

Cheers - Greg

Before the
Federal Communications Commission
Washington, D. C. 20554

In the Matter of	)	RM-9673
	)	
Request to change Part 97.305	)	
to limit certain types of	)	
transmission on prescribed	)	
portions of the Amateur	)	
VHF and UHF bands	)	

To: The Commission

COMMENTS OF John Q Amateur, Callsign

Your Address
City, State Zip
telephone or e-mail address (optional)

February 26, 1996 (the current date :-)

Introduction

xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
A typically intro explains to the FCC who you are and why you are writing
in a few paragraphs.

Overview

xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
In a few paragraphs say what you are going to outline and reinforce in the
discussion section.

Discussion

xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
This is where you get to really make your case for whatever you are wanting
to tell the FCC.Break you points into sections and explain each in detail
and give reasons and examples for each.

Conclusion

xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
State what you are asking for again and conclude. Again, a short section.

Say bye and sign, Your Name

Greg Jones, WD5IVD   Austin, Texas
wd5ivd@tapr.org   http://www.tapr.org/~wd5ivd

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To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

6. [ss] Re: [aprssig] Re: IMPORTANT TO READ...NO MORE 2 meters,etc. for digital?

From: "Brian B. Riley" <brianbr@macconnect.com>
Date: Sun, 4 Jul 1999 14:23:10 -0400
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Cc: "NETSIG list   mailing" <netsig@tapr.org>,
        "Spread Spectrum" <ss@tapr.org>
Message-ID: <LYR6751-28632-1999.07.04-13.31.28--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

On 7/4/99 1:42 PM, Greg Jones (wd5ivd@tapr.org) passed this wisdom:

>In the Matter of   )   RM-9673

 Greg - is this the right number "RM-9673" ??? Paul Toth said it was
"PRM-99WT" not "RM-9673"

Brian B. Riley --> http://members.macconnect.com/~brianbr
  For PGP Keys <mailto:brianbr@wulfden.org?subject=Get%20PGP%20Key>

  "Never ask what sort of computer a guy drives. If he's a Mac user,
   he'll tell you. If not, why embarrass him?" - Tom Clancy

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7. [ss] Error on my part

From: Greg Jones <wd5ivd@tapr.org>
Date: Sun, 4 Jul 1999 13:37:25 -0500
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-28637-1999.07.04-13.45.13--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I grabbed the wrong rule making number.

The correct NPRM is PRM99WT on the CSVHF rule making.

I grabbed the second one on the FCC web page. Should have double checked.

Sorry about that.

Cheers - Greg

Greg Jones, WD5IVD   Austin, Texas
wd5ivd@tapr.org   http://www.tapr.org/~wd5ivd

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8. [ss] Opps again

From: Greg Jones <wd5ivd@tapr.org>
Date: Sun, 4 Jul 1999 13:50:17 -0500
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-28646-1999.07.04-13.58.18--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

As someone one pointed out -- my mistake again -- the FCC as not issued a
rule making yet, so it is premature to file anything.

I got a little pumped up since this has been something I have dealt with
for a long time and was hoping for closure once and for all.

Cheers - Greg

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

9. [ss] Re: CSVHF

From: Gerry Creager <gerry@cs.tamu.edu>
Date: Sun, 04 Jul 1999 13:48:48 -0500
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-28647-1999.07.04-13.59.47--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Thanks for the info distribution. I will download the doc and read it
this week while I'm on travel... but your synopsis is pretty scary.

73,
gerry
--
Gerry Creager   Mapping Sciences Laboratory
409.845.7201 Office   Texas Agricultural Experiment Station
409.845.2273 Faz   Texas A&M University System
409.228.7686 Pager (preferred)   College Station, Texas 77843-2120
gerry@page4.tamu.edu   Pager: 4092287686@mobile.att.net
"Opinions expressed are mine and do not necessarily represent those of
Texas A&M University."

You are currently subscribed to ss as: lyris.ss@tapr.org
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10. [ss] CSVHS Filing

From: Greg Jones <wd5ivd@tapr.org>
Date: Sun, 4 Jul 1999 23:55:54 -0500
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-28714-1999.07.05-00.07.52--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

As has been pointed out to me, the 'PRM' designation has to do with the new
ULS system.

The FCC has put it out for comment and we will need to file something.

What through me off was the new ULS system.

So, everything posted so far today by was accurate. Sorry for the
confusion. You have to file by 30 days after June 28th, when it was filed.

Cheers - Greg

Greg Jones, WD5IVD   Austin, Texas
wd5ivd@tapr.org   http://www.tapr.org/~wd5ivd

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To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

11. [ss] introduction and information request

From: karel <karel@worldcom.nl>
Date: Tue, 06 Jul 1999 09:47:15 -0500
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-28767-1999.07.05-09.51.42--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Hello dear fellows,

I am a dutch ham (PE1KKL) ,working as a technical consultant in Quito,
Ecuador. I am especialy interested in spread-spectrum systems on
short-wave and micro-wave. I am following the development of the
frequency-hopping system of TAPR for more than 1 year now. I would like to
use the technology for non comercial purposes in humanitarian projects in
latin-america and africa. Now my question. Does anyone of you know of
experiments on short-wave, permitting frequency-hopping, high-speed,
9600kb/s tot 64kb/s transmissions. This would solve a problem that we
have. Transmitting high quality digital voice and music over short-wave
links. In most cases it is impossible to use micro-wave systems, because
of the large distances and the lack of funding for a micro-wave backbone
system.
I know that it is not directly in the interest of ham radio, but gaining
expierence is never bad. We also don t want to use illegaly, when used it
will be within the legal framework.
Thanks Karel Fassotte

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

12. [ss] Re: NPRM

From: Lloyd Frink <kc2agl@mhv.net>
Date: Mon, 05 Jul 1999 10:59:21 -0400
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-28770-1999.07.05-10.10.23--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Greg, I fail to see why you are not in agreement with the current NPRM.

In effect all that changes is that wideband modes are excluded on the bottom on
the bands.

Namely from 50.1 to 50.3; 144.1 to 144.3, 222.0 to 222.15, and 431.8 to 432.5
the same emission standards that apply for emissions below 29 Mhz would apply.

Additionally from 50.0 to 50.1 and 144.0 to 144.1 the same emission standards
as between 28.0 to 28.3 would apply.

I fail to see how this rule making change would stifle innovation,
experimentation, or development of a new mode, becuase large continous blocks
of spectrum would still be available for wide band emission modes and
experimentation on VHF/UHF.

In effect the weak signal operators would be protected from QRN/QRM.

As for your thaughts regarding diffuculty to change something once it is
codified (ie band plans) and the development of a new emission/modulation
scheme, I do not agree because the emission standard would be the same for all
bands below 29 Mhz. Therefore these small VHF/UHF segment pieces will follow
whatever developments take place for all HF spectrum.

Do you intend to imply that a party can state that the HF bands are
underutilized and should be placed into the commercial sector?

I fully support Bill's proposal and reccomend that everyone read and review the
proposal and make up their own mind.

73 de Lloyd, K2KJ

Greg Jones wrote:

> Steve is correct. This is a very important PRM to read, consider, and
> comment on.
>
> I have placed the pdf file in question, in my web area for easier access:
> http://www.tapr.org/~wd5ivd/RM-9673.pdf
> I urge all of you reading this message to go grab the NPRM and read it.
>
> This has been in the works for sometime now and is actually an off sprout

> of the Spread Spectrum rule making that TAPR has been pushing. I was aware
> that Bill Tynan was working on this over a year ago. There are two major
> sides to this. The NPRM reflects the side that basically wants band
> segment plans defined in the rules and the other side feels that we can't
> limit the nature of operations on the amateur bands so as to allow the most
> utilization of the spectrum as possible now and in the future, since
> technology and people who use it change with time. Once something gets
> into the rules, the spectrum is stuck. Once the spectrum is locked in
> place, we lose one of the greatest advantages of amateur radio, that of
> large segments of contiguous spectrum. If we continue to further segment
> our own spectrum, we only further reduce the usage on these segments and
> make it easier for someone to say that our bands are under utilized and
> therefore they should be placed into the commercial sector. A very
> difficult position which we would be hard pressed to defend.
>
> This is a VERY DANGEROUS slope we face if the FCC goes ahead with this
> NPRM. Bandwidth in the amateur radio bands must remain open to its usage
> and not be further segmented within the community. Their are already rules
> in the regulations that keep people from interfering with each other, and
> trying to set up band plans in Part 97 is a big mistake and will impact
> amateur radio very negatively for a long time maybe even permanently.
>
> This seems all very harmless and might look like something many of you can
> support, but the down side that isn't explained is that once rules get
> enacted in Part 97 it literally takes many years to get something changed
> again. Take the Spread Spectrum rule making TAPR started to work on in
> 1994 (yes 94). Here it is 5+ years later and the FCC has the basic wording
> defined, but it still sits someplace waiting to finally get put before the
> commissioners to get signed. Until these rules do get signed we are still
> burdened with SS rules written in the early 80's (approaching 20 years
> old). This could easily happen with this PRM. It might pass and in ten
> years we might need to be operating different modes, which would not be
> acceptable with the rules changes suggested in this PRM.
>
> The basic premise is that the amateur radio bands should be non-restrictive
> so that the spectrum benefits the most people. Hams should be trained well
> enough to know where they should operate to be in good amateur radio
> operating practice. While there are some that ignore good practice and
> operate where they want, creating additional rules in the Part 97 will not
> stop these poor operators, but it will impact those of us that do follow
> the rules and amateur radio as a whole in order to benefit a specific
> sub-group within our hobby.
>
> Greg Jones, WD5IVD
>

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13. [ss] Re: NPRM

From: Steve Dimse K4HG <k4hg@tapr.org>
Date: Mon, 5 Jul 1999 11:23:53 -0400
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-28772-1999.07.05-10.31.50--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

On 7/5/99 10:59 AM Lloyd Frink (kc2agl@mhv.net) wrote:

>In effect all that changes is that wideband modes are excluded on the
>bottom on
>the bands.
>
I think you should read the proposal more carefully. Data is excluded
everywhere on 2 and 6 meters other than 50.0 to 50.1 and 144.0 to 144.1.
It seems likely this was an error, but regardless, the proposal to
eliminate data from most of these bands is before the FCC, and must be
responded to.

Other things they propose are the elimination of all test transmissions
below 222 MHz, which could come back to haunt us (and is NOT an error in
their proposal), and MCW on the 2 meter band (all 2 meter repeaters would
need to ID by voice!)

Steve K4HG

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14. [ss] Re: NPRM

From: Bob Nielsen <nielsen@primenet.com>
Date: Mon, 5 Jul 1999 08:30:49 -0700
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-28774-1999.07.05-10.38.58--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

On Mon, Jul 05, 1999 at 10:59:21AM -0400, Lloyd Frink wrote:
> Greg, I fail to see why you are not in agreement with the current NPRM.
>
> In effect all that changes is that wideband modes are excluded on the bottom on
> the bands.
>
> Namely from 50.1 to 50.3; 144.1 to 144.3, 222.0 to 222.15, and 431.8 to 432.5
> the same emission standards that apply for emissions below 29 Mhz would apply.
>
> Additionally from 50.0 to 50.1 and 144.0 to 144.1 the same emission standards
> as between 28.0 to 28.3 would apply.
>
> I fail to see how this rule making change would stifle innovation,
> experimentation, or development of a new mode, becuase large continous blocks
> of spectrum would still be available for wide band emission modes and
> experimentation on VHF/UHF.
>
> In effect the weak signal operators would be protected from QRN/QRM.
>
> As for your thaughts regarding diffuculty to change something once it is
> codified (ie band plans) and the development of a new emission/modulation
> scheme, I do not agree because the emission standard would be the same for all
> bands below 29 Mhz. Therefore these small VHF/UHF segment pieces will follow
> whatever developments take place for all HF spectrum.
>
> Do you intend to imply that a party can state that the HF bands are
> underutilized and should be placed into the commercial sector?
>
> I fully support Bill's proposal and reccomend that everyone read and review the
> proposal and make up their own mind.
>
> 73 de Lloyd, K2KJ

Lloyd, I am in agreement with your statements regarding the need for
additional protection for narrow band modes.

However, the appendix shows 144.3-148.0 MHz as Phone, image (2), rather
than MCW, phone, image, RTTY, data, test (2),(5),(8) as is the current
144.1-148.0 MHz authorization in 97.305.

The effect of this would be to prohibit the use of any packet, other
data or experimental modes between 144.3 and 148.0 MHz (although
narrowband data modes would be allowed between 144.0 and 144.1 MHz).
This is not mentioned in the discussion and is possibly an oversight,
but one that should not go unchallenged.

73,

Bob, W6SWE

--
Bob Nielsen   Internet: nielsen@primenet.com
Tucson, AZ   AMPRnet: w6swe@w6swe.ampr.org
DM42nh   http://www.primenet.com/~nielsen

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15. [ss] Re: Central States VHF band plan proposal

From: "Louis Cobet" <Louis_Cobet@email.msn.com>
Date: Mon, 5 Jul 1999 15:30:12 -0700
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-28843-1999.07.05-17.37.52--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Hello,

I think we need to keep a sense of proportion and not push peoples positions

to their logical limit unnecesarily. First lets find out if Appendix A of
the CSVHF proposal is exactly what they want or if it was in error.

If it was in error, CSVHF should correct the errors with the commission and
with the amateur community as a whole. TAPR and other organizations and
amateurs can then also help clarify the issues before the commision.

The reality is that some amount of band segment rules are necessary. As it
is, 2 lids can carry on a lengthy QSO on FM in the weak signal area of the
bands in question. This is totally legal.
Such conduct could disrupt weak signal work in their area. All the rules
that prohibit jamming and intentional interference would not necessarily
apply.

Imagine what chaos the HF bands would be without appropriate emission rules.
The VHF bands are becoming more crowded and weak signal work needs some
protection. I support that part of the request.

The concept that rule protection for weak signal leads us down the slippery
slope is not a good one. This is comparable to saying that eating rum
cookies leads to alcoholism and life in the gutter. Again, lets keep a sense
of proportion.

What is bad about the CSVHF proposal is it was not thought out or widely
consulted. I do not believe CSVHF intended to ban packet from 2 meters. (I
hope I am right.) Wider consultation would at the least have clarified the
many issues Appendix A creates before it was submitted to the FCC.

The QSY of APRS to 144.39 was a good example of how to do these things. Yes
there were heated arguments and dislocations. But in the end the QSY was
carried out with a minimum of trouble. Why? Because there was lots of
discussion and it was widely consulted.

Louis Cobet, K6MDH
k6mdh@arrl.net

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16. [ss] Re: Central States VHF band plan proposal

From: Lyle Johnson <lylej@azstarnet.com>
Date: Tue, 06 Jul 1999 01:20:03 +0100
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-28850-1999.07.05-20.54.49--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

At 03:30 PM 7/5/99 -0700, you wrote:
>...First lets find out if Appendix A of
>the CSVHF proposal is exactly what they want or if it was in error.

If it has been submitted, then it must be commented on. If it was not as
intended by CSVHF, then they can also comment about that. But leaving it
up to the CSVHF group to "correct" the error is not a reasonable thing to
do -- otherwise, it would not have been submitted in its present form.

>...The reality is that some amount of band segment rules are necessary. As it
>is, 2 lids can carry on a lengthy QSO on FM in the weak signal area of the
>bands in question. This is totally legal.

Is it such a problem now that moonbounce and other weak signal work is
regularly interfered with? If not, why add rules that haven't been needed
to date?

Our goal should always be to simplify and reduce the number of rules, not
complicate and add rules.

>Imagine what chaos the HF bands would be without appropriate emission rules.
>The VHF bands are becoming more crowded and weak signal work needs some
>protection. I support that part of the request.

When new modes come along, there is always disruption. AMTOR usurped RTTY space on HF, packet crowded AMTOR, now we have PSK31, CLOVER and etc.

In 1977 the FCC tried to give us reasonable rules and the ARRL and Amateur community choked on them.

And here, by weak signal work, you really mean traditional, narrow-band weak signal work. The weak-signal SS people are not being afforded any protection, apparently...

>...What is bad about the CSVHF proposal is it was not thought out or widely
>consulted. I do not believe CSVHF intended to ban packet from 2 meters. (I
>hope I am right.) Wider consultation would at the least have clarified the
>many issues Appendix A creates before it was submitted to the FCC.

Yes, a BIG mistake was submitting it in its present form. Unfortunately, whatever we choose to believe, the submission has been made and it makes a number of statements which demand response.

>The QSY of APRS to 144.39 was a good example of how to do these things. Yes
>there were heated arguments and dislocations. But in the end the QSY was
>carried out with a minimum of trouble. Why? Because there was lots of
>discussion and it was widely consulted.

And there was no rules change that I am aware of. APRS is not afforded some special protection by other, presumed malicious people.

CSVHF is trying to do a good job of representing the interests of its members, many of whom are apparently narrow-band, weak-signal enthusiasts. It is up to the rest of us to comment and try to ensure that our interests are not sacrificed as a result.

Hey, some of us actually think data is a Good Thing. And is digital voice accepted as data or is it voice...?

Regards,

Lyle

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17. [ss] Question

From: Nacim rebani <nacim_rebani@yahoo.com>
Date: Tue, 6 Jul 1999 01:24:48 -0700 (PDT)
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-28877-1999.07.06-03.28.41--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Hello,

I'm a student who works for the french railway operator (SNCF). For the study I'm working on, I need to know if it is possible to connect by spread spectrum radio two locomotives distant of 750 meters.
I have worked for 4 months on the problem. But I
 can't find a spread spectrum product which allows two locomotives, equiped with directing antenna, to communicate.

If you have any question about it, don't hesitate to contact me.

_____
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18. [ss] RE: Question

From: chris@turbonet.net (Christopher Wolff)
Date: Tue, 6 Jul 1999 01:27:36 -0700
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-28885-1999.07.06-03.35.29--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Hello Nacim,

This sort of connectivity should be a relatively straightforward solution,
even at 750 meters. Are you attempting to share voice or data
communications with this system? We may be able to configure a voice over
IP solution for you to fulfill this. Please contact me off list at
chris@turbonet.net for further discussion.

Regards,
Christopher

-----Original Message-----
From: bounce-ss-9352@lists.tapr.org
[mailto:bounce-ss-9352@lists.tapr.org]On Behalf Of Nacim rebani
Sent: Tuesday, July 06, 1999 1:25 AM
To: TAPR Spread Spectrum Special Interest Group
Subject: [ss] Question

Hello,

I'm a student who works for the french railway operator (SNCF). For the
study I'm working on, I need to know if it is possible to connect by
spread spectrum radio two locomotives distant of 750 meters.
I have worked for 4 months on the problem. But I
 can't find a spread spectrum product which allows two locomotives,
equiped with directing antenna, to communicate.

If you have any question about it, don't hesitate to contact me.

_____
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---
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19. [ss] card

From: "Orkun Zorba" <orkunz@ayesas.com>
Date: Tue, 6 Jul 1999 11:59:13 +0300
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-28886-1999.07.06-04.03.44--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Hi!
I have been working on physical layer design of Wireless
Local Area Networks (WLAN). I am also using Spread
Spectrum techniques to overcome problems caused
by multipath fading in mobile radio environment.
I've simulated the environment using a PC. But I would like
to built a test bed that I can take measurements, compare
them with my simulated values and investigate the real
world:)
I am thinking to use 2 portable PCs (laptop) and a card that
performs voice communication and using Spread Spectrum,
preferably supporting IEEE802.11.
Anybody knows about this cards? I have heard about it before.
But I need some specs on it. I also would like to know if
anyone built a test environment like this.

Regards,
Orkun

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20. [ss] Re: NPRM

From: Lloyd Frink <kc2agl@mhv.net>
Date: Tue, 06 Jul 1999 11:58:33 -0400
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-28921-1999.07.06-11.10.48--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

As some have mentioned "data" and "test" emissions have been mistakely omitted from the current NPRM.

Unfortunately mistakes do occur and we are all human, however I thoroughly hope that this proposed rule making can be enacted with the following corrections. We should all comment directly to the commission on this, and I am sure that CSVHFS has learned from this that widespread distribution before petitioning is wise.

Ultimately, with an ammended PRM, via filed comments, the only change that would take place is that wideband emissions would be prohibited on the bottom of the VHF/UHF bands.

Some do not see this as a current problem, but it is, and it is getting worse, so I encourage everyone to file their comments with the Commission in support of the PRM with the addition of data and test emissions above the weak signal portions.

73 de Lloyd, now K2KJ

Here is the response directly from the horse's mouth:

> ----------
> Text of the message from Bill Tynan:
>
> A number of people have expressed concern with regard to the Central States
> VHF Society filing, and subsequent FCC RM 9673 to protect narrow slices of
> the VHF bands from widband modes. That's what the filing was for. It
> intended no other modifications of authorization for "data" or "test" modes
> above 50.3, 144.3, 222.15 and on the portions of the 70 cm band below 431.8
> and above 432.5. Unfortunately by the inadvertent omission of "data" and
> "test" from the Appendix, the filing did not properly reflect that intent.
>
> Rest assured, this inadvertent omission will be dealt with in the CSVHFS's
> comments on this matter and all of those who pointed out the discrepancy are
> thanked for bringing it to our attention.
>
> Sone have also questioned the numbers which appear in ( ) in the Appendix
> and wondered why explanations for them were not included. The reason is
> that the Appendix was intended primarily for the FCC's use in documenting
> rules CSVHFS is proposing for 50.1 - 50.3, 144.1 - 144.3, 222.0 - 222.15 and
> 431.8 - 432.5.   These numbers are from"standards" contained in the existing
> FCC Amateur rules, Section 97.307 (f). For the convenience of those
> interested, the ones pertinent to the CSVHFS filing are reproduced as
> follows:.
>
> (1) No angle modulated emission shall have a modulation index greater than
> at the highest modulation frequency.
>
> (2) No non-phone emission shall exceed the bandwidth of a communications
> quality phone emission of the same modulation type. The total bandwidth of
> an independent sideband emission (having B as the first symbol, or
> multiplexed image and phone emission, shall not exceed that of a
> communications quality A3B emission.
>
> (3) Only RTTY or data emission using a specified digital code listed in
> Section 97.309(a) of this part may be transmitted. The symbol rate must not
> exceed 300 bauds, or for frequency shift keying, the frequency shift between
> mark and space must not exceed 1 kHz.
>
> (4) Only a RTTY or data emission using a specified digital code listed in
> Section 97.309(a) of this part may be transmitted. The symbol rate must not
> exceed 1200 bauds, or for frequency shift keying, the frequency shift
> between mark and space must not exceed 1 kHz.
>
> (5) A RTTY or multiplexed data emission using a specified digital code
> listed in Section 97.309 (a) of this part may be transmitted. The symbol
> rate must not exceed 19.6 kilobauds. A RTTY, data or multiplexed emission
> using an unspecified digital code under the limitations listed in Section
> 97.309(b) of this part also may be transmitted. The authorized bandwidth is
> 20 kHz.

>
> (6) A RTTY, data or multiplexed emission using a specified digital code
> listed in 97.309(a) of this part may be transmitted. The symbol rate must
> not exceed 56 kilobauds. A RTTY, data or multiplexed emission using an
> unspecified digital code under the limitations listed in Section 97.309(b)
> of this part also may be transmitted. The authorized bandwidth is 100 kHz.
>
> (7) A RTTY, data or multiplex emission using a specified digital code listed
> in Section 97.309(a) of this part or an unspecified digital code under the
> limitations listed in Section 97.309(b) of this part may be transmitted.
>
> (8) A RTTY or data emission having designators with A, B. C, D, E, F, G, H,
> J or R as the first symbol; or D or W as the third symbol is also
> authorized.
>
> There are others, but they are not pertinent to the CSVHF filing.
>
> I hope this clears up any misunderstanding.

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21. [ss] Re: card

From: "Scott C. Best" <sbest00@svpal.org>
Date: Tue, 6 Jul 1999 12:18:20 -0700 (PDT)
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-28942-1999.07.06-14.26.14--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Orkun:
        Try to find the May-99 issues of Mobile Computing and
Communications. I think it was the May issue...
        In that 'zine they compare and contrast five 802.11
products, including Lucent's, Aironet's, Breezecom's, WebGear's
and another which I forget now.
        Take note, though, that 802.11 cards are expensive,
upwards of $300 for a card and $1000 for an access-point (a
wired ethernet to wireless ethernet hub). For home experimentation,
I think you'd be better off without 802.11, but with something
cheaper like Alation's HOP stuff (sold via Diamond Multimedia's
HomeFree product) or Proxim's Symphony line. These cheap ones,
though, are frequency-hoppers; if you *really* want direct sequence
(and who doesn't ;) then (I believe) 802.11 is your only choice.

        Good luck!

-Scott

On Tue, 6 Jul 1999, Orkun Zorba wrote:

> Hi!
> I have been working on physical layer design of Wireless
> Local Area Networks (WLAN). I am also using Spread
> Spectrum techniques to overcome problems caused
> by multipath fading in mobile radio environment.
> I've simulated the environment using a PC. But I would like
> to built a test bed that I can take measurements, compare
> them with my simulated values and investigate the real
> world:)
> I am thinking to use 2 portable PCs (laptop) and a card that
> performs voice communication and using Spread Spectrum,
> preferably supporting IEEE802.11.
> Anybody knows about this cards? I have heard about it before.
> But I need some specs on it. I also would like to know if
> anyone built a test environment like this.
>
> Regards,
> Orkun
>
>
>
>
>
>
> ---
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>
>

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22. [ss] Re: card

From: "Tim Moore (Exchange)" <timmoore@Microsoft.com>
Date: Tue, 6 Jul 1999 12:49:40 -0700
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-28945-1999.07.06-14.58.21--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

You dont need an access point unless you have a large network and need
roaming across it. Most 802.11 have an adhoc mode which communicates
directly from card to card - certainly lucent and aironet have this, I
haven't tried the others. If you need an access point then Zoomair
http://www.zoomtel.com/ do a software access point for win95. Last time I
looked zoomair are about $280 for the cards and $170 for the access point
software. I haven't tried Zoomairs stuff but looking at their website the
cards look to be similar/same as Nortel/Bays.

Tim

-----Original Message-----
From: Scott C. Best [mailto:sbest00@svpal.org]
Sent: Tuesday, July 06, 1999 12:18 PM
To: TAPR Spread Spectrum Special Interest Group
Subject: [ss] Re: card

Orkun:
        Try to find the May-99 issues of Mobile Computing and
Communications. I think it was the May issue...
        In that 'zine they compare and contrast five 802.11
products, including Lucent's, Aironet's, Breezecom's, WebGear's
and another which I forget now.
        Take note, though, that 802.11 cards are expensive,
upwards of $300 for a card and $1000 for an access-point (a
wired ethernet to wireless ethernet hub). For home experimentation,
I think you'd be better off without 802.11, but with something
cheaper like Alation's HOP stuff (sold via Diamond Multimedia's
HomeFree product) or Proxim's Symphony line. These cheap ones,
though, are frequency-hoppers; if you *really* want direct sequence
(and who doesn't ;) then (I believe) 802.11 is your only choice.

        Good luck!

-Scott

On Tue, 6 Jul 1999, Orkun Zorba wrote:

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> Local Area Networks (WLAN). I am also using Spread
> Spectrum techniques to overcome problems caused
> by multipath fading in mobile radio environment.
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> Anybody knows about this cards? I have heard about it before.
> But I need some specs on it. I also would like to know if
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>
> Regards,
> Orkun
>
>
>
>
>
> ---

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23. [ss] RE: Question

From: Nacim rebani <nacim_rebani@yahoo.com>
Date: Fri, 9 Jul 1999 00:40:14 -0700 (PDT)
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-29292-1999.07.09-02.45.21--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Hello Christopher,

              I thank you for the interest which you carry to my
question.
In my project, i use only the data . My objective is to propose a
network management for the engines of freight.
My problem is a problem of hardware and not software. I will wish to
know if networks of this type exists at the different one.
Can you help me after that.

Regards.
Nacim.

--- Christopher Wolff <chris@turbonet.net> a écrit:
> Hello Nacim,
>
> This sort of connectivity should be a relatively
> straightforward solution,
> even at 750 meters. Are you attempting to share
> voice or data
> communications with this system? We may be able to
> configure a voice over
> IP solution for you to fulfill this. Please contact
> me off list at
> chris@turbonet.net for further discussion.
>
> Regards,
> Christopher
>
> -----Original Message-----
> From: bounce-ss-9352@lists.tapr.org
> [mailto:bounce-ss-9352@lists.tapr.org]On Behalf Of
> Nacim rebani
> Sent: Tuesday, July 06, 1999 1:25 AM
> To: TAPR Spread Spectrum Special Interest Group
> Subject: [ss] Question
>
>
>
> Hello,
>
> I'm a student who works for the french railway
> operator (SNCF). For the
> study I'm working on, I need to know if it is
> possible to connect by
> spread spectrum radio two locomotives distant of 750
> meters.
> I have worked for 4 months on the problem. But I
> can't find a spread spectrum product which allows
> two locomotives,
> equiped with directing antenna, to communicate.
>
> If you have any question about it, don't hesitate to
> contact me.
>
>
>
> _____

> Do You Yahoo!?
> Get your free @yahoo.com address at
> http://mail.yahoo.com
>
>
> ---
> You are currently subscribed to ss as:
> chris@turbonet.net
> To unsubscribe send a blank email to
> leave-ss-6751T@lists.tapr.org
>
>
> ---
> You are currently subscribed to ss as:
> nacim_rebani@yahoo.com
> To unsubscribe send a blank email to
> leave-ss-6751T@lists.tapr.org
>
>

_____
Do You Yahoo!?
Get your free @yahoo.com address at http://mail.yahoo.com

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

24. [ss] Return Message

From: "ORAPOST" <ORAPOST@santandersupernet.com>
Date: 09 Jul 99 09:40:20 +0200
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-29294-1999.07.09-02.51.38--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

The included message could not be delivered to the following invalid mail names. Please verify these names and try them again.

Bad name: eb7cjo

25. [ss] Return Message

From: "ORAPOST" <ORAPOST@santandersupernet.com>
Date: 09 Jul 99 09:46:31 +0200
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-29295-1999.07.09-02.56.37--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

The included message could not be delivered to the following invalid mail names. Please verify these names and try them again.

Bad name: eb7cjo

26. [ss] Return Message

From: "ORAPOST" <ORAPOST@santandersupernet.com>
Date: 09 Jul 99 09:51:37 +0200
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-29296-1999.07.09-03.01.40--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

The included message could not be delivered to the following invalid mail names. Please verify these names and try them again.

Bad name: eb7cjo

27. [ss] Return Message

From: "ORAPOST" <ORAPOST@santandersupernet.com>
Date: 09 Jul 99 09:56:42 +0200
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-29297-1999.07.09-03.06.38--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

The included message could not be delivered to the following invalid mail names. Please verify these names and try them again.

Bad name: eb7cjo

28. [ss] Return Message

From: "ORAPOST" <ORAPOST@santandersupernet.com>
Date: 09 Jul 99 10:01:51 +0200
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-29298-1999.07.09-03.11.44--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

The included message could not be delivered to the following invalid mail names. Please verify these names and try them again.

Bad name: eb7cjo

29. [ss] Return Message

From: "ORAPOST" <ORAPOST@santandersupernet.com>
Date: 09 Jul 99 10:07:03 +0200
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-29299-1999.07.09-03.17.02--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

The included message could not be delivered to the following invalid mail names. Please verify these names and try them again.

Bad name: eb7cjo

30. [ss] Return Message

From: "ORAPOST" <ORAPOST@santandersupernet.com>
Date: 09 Jul 99 10:11:08 +0200
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-29300-1999.07.09-03.22.06--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

The included message could not be delivered to the following invalid mail names. Please verify these names and try them again.

Bad name: eb7cjo

31. [ss] Return Message

From: "ORAPOST" <ORAPOST@santandersupernet.com>
Date: 09 Jul 99 10:17:15 +0200
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-29301-1999.07.09-03.27.27--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

The included message could not be delivered to the following invalid mail names. Please verify these names and try them again.

Bad name: eb7cjo

32. [ss] Return Message

From: "ORAPOST" <ORAPOST@santandersupernet.com>
Date: 09 Jul 99 10:22:24 +0200
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-29302-1999.07.09-03.32.19--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

The included message could not be delivered to the following invalid mail names. Please verify these names and try them again.

Bad name: eb7cjo

33. [ss] Return Message

From: "ORAPOST" <ORAPOST@santandersupernet.com>
Date: 09 Jul 99 10:27:33 +0200
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-29304-1999.07.09-03.37.32--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

The included message could not be delivered to the following invalid mail names. Please verify these names and try them again.

Bad name: eb7cjo

34. [ss] Return Message

From: "ORAPOST" <ORAPOST@santandersupernet.com>
Date: 09 Jul 99 10:34:43 +0200
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-29307-1999.07.09-03.47.57--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

The included message could not be delivered to the following invalid mail names. Please verify these names and try them again.

Bad name: eb7cjo

35. [ss] Return Message

From: "ORAPOST" <ORAPOST@santandersupernet.com>
Date: 09 Jul 99 10:43:01 +0200
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-29309-1999.07.09-03.53.29--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

The included message could not be delivered to the following invalid mail names. Please verify these names and try them again.

Bad name: eb7cjo

36. [ss] Return Message

From: "ORAPOST" <ORAPOST@santandersupernet.com>
Date: 09 Jul 99 10:48:16 +0200
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-29311-1999.07.09-03.58.15--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

The included message could not be delivered to the following invalid mail names. Please verify these names and try them again.

Bad name: eb7cjo

37. [ss] Return Message

From: "ORAPOST" <ORAPOST@santandersupernet.com>
Date: 09 Jul 99 10:53:24 +0200
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-29312-1999.07.09-04.03.25--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

The included message could not be delivered to the following invalid mail names. Please verify these names and try them again.

Bad name: eb7cjo

38. [ss] Return Message

From: "ORAPOST" <ORAPOST@santandersupernet.com>
Date: 09 Jul 99 10:58:32 +0200
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-29314-1999.07.09-04.08.39--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

The included message could not be delivered to the following invalid mail names. Please verify these names and try them again.

Bad name: eb7cjo

39. [ss] Return Message

From: "ORAPOST" <ORAPOST@santandersupernet.com>
Date: 09 Jul 99 11:04:39 +0200
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-29316-1999.07.09-04.14.13--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

The included message could not be delivered to the following invalid mail names. Please verify these names and try them again.

Bad name: eb7cjo

40. [ss] Return Message

From: "ORAPOST" <ORAPOST@santandersupernet.com>
Date: 09 Jul 99 11:10:47 +0200
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-29318-1999.07.09-04.18.52--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

The included message could not be delivered to the following invalid mail names. Please verify these names and try them again.

Bad name: eb7cjo

41. [ss] Return Message

From: "ORAPOST" <ORAPOST@santandersupernet.com>
Date: 09 Jul 99 11:16:54 +0200
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-29319-1999.07.09-04.29.03--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

The included message could not be delivered to the following invalid mail names. Please verify these names and try them again.

Bad name: eb7cjo

42. [ss] Return Message

From: "ORAPOST" <ORAPOST@santandersupernet.com>
Date: 09 Jul 99 11:24:03 +0200
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-29320-1999.07.09-04.34.11--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

The included message could not be delivered to the following invalid mail names. Please verify these names and try them again.

Bad name: eb7cjo

43. [ss] Return Message

From: "ORAPOST" <ORAPOST@santandersupernet.com>
Date: 09 Jul 99 11:29:13 +0200
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-29321-1999.07.09-04.39.26--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

The included message could not be delivered to the following invalid mail names. Please verify these names and try them again.

Bad name: eb7cjo

44. [ss] Return Message

From: "ORAPOST" <ORAPOST@santandersupernet.com>
Date: 09 Jul 99 11:33:22 +0200
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-29323-1999.07.09-04.44.37--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

The included message could not be delivered to the following invalid mail names. Please verify these names and try them again.

Bad name: eb7cjo

45. [ss] Return Message

From: "ORAPOST" <ORAPOST@santandersupernet.com>
Date: 09 Jul 99 11:40:31 +0200
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-29324-1999.07.09-04.49.46--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

The included message could not be delivered to the following invalid mail names. Please verify these names and try them again.

Bad name: eb7cjo

46. [ss] Return Message

From: "ORAPOST" <ORAPOST@santandersupernet.com>
Date: 09 Jul 99 11:44:36 +0200
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-29325-1999.07.09-04.54.30--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

The included message could not be delivered to the following invalid mail names. Please verify these names and try them again.

Bad name: eb7cjo

47. [ss] Return Message

From: "ORAPOST" <ORAPOST@santandersupernet.com>
Date: 09 Jul 99 11:48:45 +0200
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-29326-1999.07.09-04.59.54--lyris.ss#tapr.org@lists.tapr.org>

Rendered body type: text/plain

The included message could not be delivered to the following invalid mail names. Please verify these names and try them again.

Bad name: eb7cjo

48. [ss] Return Message

From: "ORAPOST" <ORAPOST@santandersupernet.com>
Date: 09 Jul 99 11:54:56 +0200
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-29327-1999.07.09-05.04.42--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

The included message could not be delivered to the following invalid mail names. Please verify these names and try them again.

Bad name: eb7cjo

49. [ss] Return Message

From: "ORAPOST" <ORAPOST@santandersupernet.com>
Date: 09 Jul 99 12:00:04 +0200
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-29328-1999.07.09-05.09.52--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

The included message could not be delivered to the following invalid mail names. Please verify these names and try them again.

Bad name: eb7cjo

50. [ss] Return Message

From: "ORAPOST" <ORAPOST@santandersupernet.com>
Date: 09 Jul 99 12:05:09 +0200
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-29330-1999.07.09-05.15.23--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

The included message could not be delivered to the following invalid mail names. Please verify these names and try them again.

Bad name: eb7cjo

51. [ss] Return Message

From: "ORAPOST" <ORAPOST@santandersupernet.com>
Date: 09 Jul 99 12:11:19 +0200
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-29332-1999.07.09-05.20.13--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

The included message could not be delivered to the following invalid mail names. Please verify these names and try them again.

Bad name: eb7cjo

52. [ss] Return Message

From: "ORAPOST" <ORAPOST@santandersupernet.com>
Date: 09 Jul 99 12:15:24 +0200
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-29334-1999.07.09-05.25.02--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

The included message could not be delivered to the following invalid mail names. Please verify these names and try them again.

Bad name: eb7cjo

53. [ss] Return Message

From: "ORAPOST" <ORAPOST@santandersupernet.com>
Date: 09 Jul 99 12:20:32 +0200
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-29335-1999.07.09-05.30.12--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

The included message could not be delivered to the following invalid mail names. Please verify these names and try them again.

Bad name: eb7cjo

54. [ss] Return Message

From: "ORAPOST" <ORAPOST@santandersupernet.com>
Date: 09 Jul 99 12:25:40 +0200
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-29336-1999.07.09-05.35.13--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

The included message could not be delivered to the following invalid mail names. Please verify these names and try them again.

Bad name: eb7cjo

55. [ss] Return Message

From: "ORAPOST" <ORAPOST@santandersupernet.com>
Date: 09 Jul 99 12:29:45 +0200
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-29337-1999.07.09-05.40.39--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

The included message could not be delivered to the following invalid mail names. Please verify these names and try them again.

Bad name: eb7cjo

56. [ss] Return Message

From: "ORAPOST" <ORAPOST@santandersupernet.com>
Date: 09 Jul 99 12:35:55 +0200
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-29338-1999.07.09-05.46.02--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

The included message could not be delivered to the following invalid mail names. Please verify these names and try them again.

Bad name: eb7cjo

57. [ss] Return Message

From: "ORAPOST" <ORAPOST@santandersupernet.com>
Date: 09 Jul 99 12:41:02 +0200
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-29339-1999.07.09-05.50.56--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

The included message could not be delivered to the following invalid mail names. Please verify these names and try them again.

Bad name: eb7cjo

58. [ss] Return Message

From: "ORAPOST" <ORAPOST@santandersupernet.com>
Date: 09 Jul 99 12:46:09 +0200
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-29340-1999.07.09-05.56.22--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

The included message could not be delivered to the following invalid mail names. Please verify these names and try them again.

Bad name: eb7cjo

59. [ss] Return Message

From: "ORAPOST" <ORAPOST@santandersupernet.com>
Date: 09 Jul 99 12:51:18 +0200
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-29341-1999.07.09-06.01.10--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

The included message could not be delivered to the following invalid mail names. Please verify these names and try them again.

Bad name: eb7cjo

60. [ss] Return Message

From: "ORAPOST" <ORAPOST@santandersupernet.com>
Date: 09 Jul 99 12:56:24 +0200
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-29342-1999.07.09-06.06.23--lyris.ss#tapr.org@lists.tapr.org>

Rendered body type: text/plain

The included message could not be delivered to the following invalid mail names. Please verify these names and try them again.

Bad name: eb7cjo

61. [ss] Return Message

From: "ORAPOST" <ORAPOST@santandersupernet.com>
Date: 09 Jul 99 13:01:32 +0200
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-29343-1999.07.09-06.11.27--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

The included message could not be delivered to the following invalid mail names. Please verify these names and try them again.

Bad name: eb7cjo

62. [ss] Return Message

From: "ORAPOST" <ORAPOST@santandersupernet.com>
Date: 09 Jul 99 13:06:40 +0200
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-29344-1999.07.09-06.16.42--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

The included message could not be delivered to the following invalid mail names. Please verify these names and try them again.

Bad name: eb7cjo

63. [ss] Return Message

From: "ORAPOST" <ORAPOST@santandersupernet.com>
Date: 09 Jul 99 13:11:50 +0200
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-29347-1999.07.09-06.21.40--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

The included message could not be delivered to the following invalid mail names. Please verify these names and try them again.

Bad name: eb7cjo

64. [ss] Return Message

From: "ORAPOST" <ORAPOST@santandersupernet.com>
Date: 09 Jul 99 13:17:00 +0200
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-29348-1999.07.09-06.27.06--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

The included message could not be delivered to the following invalid mail names. Please verify these names and try them again.

Bad name: eb7cjo

65. [ss] Return Message

From: "ORAPOST" <ORAPOST@santandersupernet.com>
Date: 09 Jul 99 13:22:07 +0200
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-29349-1999.07.09-06.32.15--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

The included message could not be delivered to the following invalid mail names. Please verify these names and try them again.

Bad name: eb7cjo

66. [ss] Return Message

From: "ORAPOST" <ORAPOST@santandersupernet.com>
Date: 09 Jul 99 13:27:13 +0200
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-29351-1999.07.09-06.37.15--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

The included message could not be delivered to the following invalid mail names. Please verify these names and try them again.

Bad name: eb7cjo

67. [ss] Return Message

From: "ORAPOST" <ORAPOST@santandersupernet.com>
Date: 09 Jul 99 13:32:24 +0200
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-29353-1999.07.09-06.42.24--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

The included message could not be delivered to the following invalid mail names. Please verify these names and try them again.

Bad name: eb7cjo

68. [ss] Return Message

From: "ORAPOST" <ORAPOST@santandersupernet.com>
Date: 09 Jul 99 13:37:36 +0200
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-29354-1999.07.09-06.47.39--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

The included message could not be delivered to the following invalid mail names. Please verify these names and try them again.

Bad name: eb7cjo

69. [ss] Return Message

From: "ORAPOST" <ORAPOST@santandersupernet.com>
Date: 09 Jul 99 13:42:42 +0200
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-29360-1999.07.09-06.52.54--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

The included message could not be delivered to the following invalid mail names. Please verify these names and try them again.

Bad name: eb7cjo

70. [ss] Return Message

From: "ORAPOST" <ORAPOST@santandersupernet.com>
Date: 09 Jul 99 13:48:48 +0200
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-29362-1999.07.09-06.58.16--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

The included message could not be delivered to the following invalid mail names. Please verify these names and try them again.

Bad name: eb7cjo

71. [ss] Return Message

From: "ORAPOST" <ORAPOST@santandersupernet.com>
Date: 09 Jul 99 13:53:55 +0200
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-29364-1999.07.09-07.03.10--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

The included message could not be delivered to the following invalid mail names. Please verify these names and try them again.

Bad name: eb7cjo

72. [ss] Re: remove

From: rob <eagleyes@gis.net>
Date: Fri, 09 Jul 1999 07:59:13 -0400
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-29367-1999.07.09-07.08.40--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

ORAPOST wrote:

> The included message could not be delivered to the following invalid mail names. Please verify these names and try them again.
>
> Bad name: eb7cjo
>
>   ----------
>
> Subject: [ss] Return Message
> Date: 09 Jul 99 13:42:42

> From: "ORAPOST" <ORAPOST@santandersupernet.com>
> Reply-To: ss@lists.tapr.org
> To: "TAPR Spread Spectrum Special Interest Group" <ss>
>
> The included message could not be delivered to the following invalid mail names. Please verify these
names and try them again.
>
> Bad name: eb7cjo
>
>   --
>
> Subject: [ss] Return Message
> Date: 09 Jul 99 13:37:36
> From: "ORAPOST" <ORAPOST@santandersupernet.com>
> Reply-To: ss@lists.tapr.org
> To: "TAPR Spread Spectrum Special Interest Group" <ss>
>
> The included message could not be delivered to the following invalid mail names. Please verify these
names and try them again.
>
> Bad name: eb7cjo
>
>   --
>
> Subject: [ss] Return Message
> Date: 09 Jul 99 13:32:24
> From: "ORAPOST" <ORAPOST@santandersupernet.com>
> Reply-To: ss@lists.tapr.org
> To: "TAPR Spread Spectrum Special Interest Group" <ss>
>
> The included message could not be delivered to the following invalid mail names. Please verify these
names and try them again.
>
> Bad name: eb7cjo
>
>   --
>
> Subject: [ss] Return Message
> Date: 09 Jul 99 13:27:13
> From: "ORAPOST" <ORAPOST@santandersupernet.com>
> Reply-To: ss@lists.tapr.org
> To: "TAPR Spread Spectrum Special Interest Group" <ss>
>
> The included message could not be delivered to the following invalid mail names. Please verify these
names and try them again.
>
> Bad name: eb7cjo
>
>   --
>
> Subject: [ss] Return Message
> Date: 09 Jul 99 13:22:07
> From: "ORAPOST" <ORAPOST@santandersupernet.com>
> Reply-To: ss@lists.tapr.org
> To: "TAPR Spread Spectrum Special Interest Group" <ss>
>
> The included message could not be delivered to the following invalid mail names. Please verify these
names and try them again.
>
> Bad name: eb7cjo
>
>   --
>
> Subject: [ss] Return Message
> Date: 09 Jul 99 13:17:00
> From: "ORAPOST" <ORAPOST@santandersupernet.com>
> Reply-To: ss@lists.tapr.org
> To: "TAPR Spread Spectrum Special Interest Group" <ss>
>
> The included message could not be delivered to the following invalid mail names. Please verify these
names and try them again.
>
> Bad name: eb7cjo
>
>   --
>
> Subject: [ss] Return Message
> Date: 09 Jul 99 13:11:50
> From: "ORAPOST" <ORAPOST@santandersupernet.com>

> Reply-To: ss@lists.tapr.org
> To: "TAPR Spread Spectrum Special Interest Group" <ss>
>
> The included message could not be delivered to the following invalid mail names. Please verify these
names and try them again.
>
> Bad name: eb7cjo
>
>   ----------
>
> Subject: [ss] Return Message
> Date: 09 Jul 99 13:06:40
> From: "ORAPOST" <ORAPOST@santandersupernet.com>
> Reply-To: ss@lists.tapr.org
> To: "TAPR Spread Spectrum Special Interest Group" <ss>
>
> The included message could not be delivered to the following invalid mail names. Please verify these
names and try them again.
>
> Bad name: eb7cjo
>
>   ----------
>
> Subject: [ss] Return Message
> Date: 09 Jul 99 13:01:32
> From: "ORAPOST" <ORAPOST@santandersupernet.com>
> Reply-To: ss@lists.tapr.org
> To: "TAPR Spread Spectrum Special Interest Group" <ss>
>
> The included message could not be delivered to the following invalid mail names. Please verify these
names and try them again.
>
> Bad name: eb7cjo
>
>   ----------
>
> Subject: [ss] Return Message
> Date: 09 Jul 99 12:56:24
> From: "ORAPOST" <ORAPOST@santandersupernet.com>
> Reply-To: ss@lists.tapr.org
> To: "TAPR Spread Spectrum Special Interest Group" <ss>
>
> The included message could not be delivered to the following invalid mail names. Please verify these
names and try them again.
>
> Bad name: eb7cjo
>
>   ----------
>
> Subject: [ss] Return Message
> Date: 09 Jul 99 12:51:18
> From: "ORAPOST" <ORAPOST@santandersupernet.com>
> Reply-To: ss@lists.tapr.org
> To: "TAPR Spread Spectrum Special Interest Group" <ss>
>
> The included message could not be delivered to the following invalid mail names. Please verify these
names and try them again.
>
> Bad name: eb7cjo
>
>   ----------
>
> Subject: [ss] Return Message
> Date: 09 Jul 99 12:46:09
> From: "ORAPOST" <ORAPOST@santandersupernet.com>
> Reply-To: ss@lists.tapr.org
> To: "TAPR Spread Spectrum Special Interest Group" <ss>
>
> The included message could not be delivered to the following invalid mail names. Please verify these
names and try them again.
>
> Bad name: eb7cjo
>
>   ----------
>
> Subject: [ss] Return Message
> Date: 09 Jul 99 12:41:02
> From: "ORAPOST" <ORAPOST@santandersupernet.com>
> Reply-To: ss@lists.tapr.org

> To: "TAPR Spread Spectrum Special Interest Group" <ss>
>
> The included message could not be delivered to the following invalid mail names. Please verify these
names and try them again.
>
> Bad name: eb7cjo
>
>   --
>
> Subject: [ss] Return Message
> Date: 09 Jul 99 12:35:55
> From: "ORAPOST" <ORAPOST@santandersupernet.com>
> Reply-To: ss@lists.tapr.org
> To: "TAPR Spread Spectrum Special Interest Group" <ss>
>
> The included message could not be delivered to the following invalid mail names. Please verify these
names and try them again.
>
> Bad name: eb7cjo
>
>   --
>
> Subject: [ss] Return Message
> Date: 09 Jul 99 12:29:45
> From: "ORAPOST" <ORAPOST@santandersupernet.com>
> Reply-To: ss@lists.tapr.org
> To: "TAPR Spread Spectrum Special Interest Group" <ss>
>
> The included message could not be delivered to the following invalid mail names. Please verify these
names and try them again.
>
> Bad name: eb7cjo
>
>   --
>
> Subject: [ss] Return Message
> Date: 09 Jul 99 12:25:40
> From: "ORAPOST" <ORAPOST@santandersupernet.com>
> Reply-To: ss@lists.tapr.org
> To: "TAPR Spread Spectrum Special Interest Group" <ss>
>
> The included message could not be delivered to the following invalid mail names. Please verify these
names and try them again.
>
> Bad name: eb7cjo
>
>   --
>
> Subject: [ss] Return Message
> Date: 09 Jul 99 12:20:32
> From: "ORAPOST" <ORAPOST@santandersupernet.com>
> Reply-To: ss@lists.tapr.org
> To: "TAPR Spread Spectrum Special Interest Group" <ss>
>
> The included message could not be delivered to the following invalid mail names. Please verify these
names and try them again.
>
> Bad name: eb7cjo
>
>   --
>
> Subject: [ss] Return Message
> Date: 09 Jul 99 12:15:24
> From: "ORAPOST" <ORAPOST@santandersupernet.com>
> Reply-To: ss@lists.tapr.org
> To: "TAPR Spread Spectrum Special Interest Group" <ss>
>
> The included message could not be delivered to the following invalid mail names. Please verify these
names and try them again.
>
> Bad name: eb7cjo
>
>   --
>
> Subject: [ss] Return Message
> Date: 09 Jul 99 12:11:19
> From: "ORAPOST" <ORAPOST@santandersupernet.com>
> Reply-To: ss@lists.tapr.org
> To: "TAPR Spread Spectrum Special Interest Group" <ss>

>
> The included message could not be delivered to the following invalid mail names. Please verify these
names and try them again.
>
> Bad name: eb7cjo
>
>   --
>
> Subject: [ss] Return Message
> Date: 09 Jul 99 12:05:09
> From: "ORAPOST" <ORAPOST@santandersupernet.com>
> Reply-To: ss@lists.tapr.org
> To: "TAPR Spread Spectrum Special Interest Group" <ss>
>
> The included message could not be delivered to the following invalid mail names. Please verify these
names and try them again.
>
> Bad name: eb7cjo
>
>   --
>
> Subject: [ss] Return Message
> Date: 09 Jul 99 12:00:04
> From: "ORAPOST" <ORAPOST@santandersupernet.com>
> Reply-To: ss@lists.tapr.org
> To: "TAPR Spread Spectrum Special Interest Group" <ss>
>
> The included message could not be delivered to the following invalid mail names. Please verify these
names and try them again.
>
> Bad name: eb7cjo
>
>   --
>
> Subject: [ss] Return Message
> Date: 09 Jul 99 11:54:56
> From: "ORAPOST" <ORAPOST@santandersupernet.com>
> Reply-To: ss@lists.tapr.org
> To: "TAPR Spread Spectrum Special Interest Group" <ss>
>
> The included message could not be delivered to the following invalid mail names. Please verify these
names and try them again.
>
> Bad name: eb7cjo
>
>   --
>
> Subject: [ss] Return Message
> Date: 09 Jul 99 11:48:45
> From: "ORAPOST" <ORAPOST@santandersupernet.com>
> Reply-To: ss@lists.tapr.org
> To: "TAPR Spread Spectrum Special Interest Group" <ss>
>
> The included message could not be delivered to the following invalid mail names. Please verify these
names and try them again.
>
> Bad name: eb7cjo
>
>   --
>
> Subject: [ss] Return Message
> Date: 09 Jul 99 11:44:36
> From: "ORAPOST" <ORAPOST@santandersupernet.com>
> Reply-To: ss@lists.tapr.org
> To: "TAPR Spread Spectrum Special Interest Group" <ss>
>
> The included message could not be delivered to the following invalid mail names. Please verify these
names and try them again.
>
> Bad name: eb7cjo
>
>   --
>
> Subject: [ss] Return Message
> Date: 09 Jul 99 11:40:31
> From: "ORAPOST" <ORAPOST@santandersupernet.com>
> Reply-To: ss@lists.tapr.org
> To: "TAPR Spread Spectrum Special Interest Group" <ss>
>

> The included message could not be delivered to the following invalid mail names. Please verify these
names and try them again.
>
> Bad name: eb7cjo
>
>   --
>
> Subject: [ss] Return Message
> Date: 09 Jul 99 11:33:22
> From: "ORAPOST" <ORAPOST@santandersupernet.com>
> Reply-To: ss@lists.tapr.org
> To: "TAPR Spread Spectrum Special Interest Group" <ss>
>
> The included message could not be delivered to the following invalid mail names. Please verify these
names and try them again.
>
> Bad name: eb7cjo
>
>   --
>
> Subject: [ss] Return Message
> Date: 09 Jul 99 11:29:13
> From: "ORAPOST" <ORAPOST@santandersupernet.com>
> Reply-To: ss@lists.tapr.org
> To: "TAPR Spread Spectrum Special Interest Group" <ss>
>
> The included message could not be delivered to the following invalid mail names. Please verify these
names and try them again.
>
> Bad name: eb7cjo
>
>   --
>
> Subject: [ss] Return Message
> Date: 09 Jul 99 11:24:03
> From: "ORAPOST" <ORAPOST@santandersupernet.com>
> Reply-To: ss@lists.tapr.org
> To: "TAPR Spread Spectrum Special Interest Group" <ss>
>
> The included message could not be delivered to the following invalid mail names. Please verify these
names and try them again.
>
> Bad name: eb7cjo
>
>   --
>
> Subject: [ss] Return Message
> Date: 09 Jul 99 11:16:54
> From: "ORAPOST" <ORAPOST@santandersupernet.com>
> Reply-To: ss@lists.tapr.org
> To: "TAPR Spread Spectrum Special Interest Group" <ss>
>
> The included message could not be delivered to the following invalid mail names. Please verify these
names and try them again.
>
> Bad name: eb7cjo
>
>   --
>
> Subject: [ss] Return Message
> Date: 09 Jul 99 11:10:47
> From: "ORAPOST" <ORAPOST@santandersupernet.com>
> Reply-To: ss@lists.tapr.org
> To: "TAPR Spread Spectrum Special Interest Group" <ss>
>
> The included message could not be delivered to the following invalid mail names. Please verify these
names and try them again.
>
> Bad name: eb7cjo
>
>   --
>
> Subject: [ss] Return Message
> Date: 09 Jul 99 11:04:39
> From: "ORAPOST" <ORAPOST@santandersupernet.com>
> Reply-To: ss@lists.tapr.org
> To: "TAPR Spread Spectrum Special Interest Group" <ss>
>
> The included message could not be delivered to the following invalid mail names. Please verify these

names and try them again.
>
> Bad name: eb7cjo
>
>   --
>
> Subject: [ss] Return Message
> Date: 09 Jul 99 10:58:32
> From: "ORAPOST" <ORAPOST@santandersupernet.com>
> Reply-To: ss@lists.tapr.org
> To: "TAPR Spread Spectrum Special Interest Group" <ss>
>
> The included message could not be delivered to the following invalid mail names. Please verify these
names and try them again.
>
> Bad name: eb7cjo
>
>   --
>
> Subject: [ss] Return Message
> Date: 09 Jul 99 10:53:24
> From: "ORAPOST" <ORAPOST@santandersupernet.com>
> Reply-To: ss@lists.tapr.org
> To: "TAPR Spread Spectrum Special Interest Group" <ss>
>
> The included message could not be delivered to the following invalid mail names. Please verify these
names and try them again.
>
> Bad name: eb7cjo
>
>   --
>
> Subject: [ss] Return Message
> Date: 09 Jul 99 10:48:16
> From: "ORAPOST" <ORAPOST@santandersupernet.com>
> Reply-To: ss@lists.tapr.org
> To: "TAPR Spread Spectrum Special Interest Group" <ss>
>
> The included message could not be delivered to the following invalid mail names. Please verify these
names and try them again.
>
> Bad name: eb7cjo
>
>   --
>
> Subject: [ss] Return Message
> Date: 09 Jul 99 10:43:01
> From: "ORAPOST" <ORAPOST@santandersupernet.com>
> Reply-To: ss@lists.tapr.org
> To: "TAPR Spread Spectrum Special Interest Group" <ss>
>
> The included message could not be delivered to the following invalid mail names. Please verify these
names and try them again.
>
> Bad name: eb7cjo
>
>   --
>
> Subject: [ss] Return Message
> Date: 09 Jul 99 10:34:43
> From: "ORAPOST" <ORAPOST@santandersupernet.com>
> Reply-To: ss@lists.tapr.org
> To: "TAPR Spread Spectrum Special Interest Group" <ss>
>
> The included message could not be delivered to the following invalid mail names. Please verify these
names and try them again.
>
> Bad name: eb7cjo
>
>   --
>
> Subject: [ss] Return Message
> Date: 09 Jul 99 10:27:33
> From: "ORAPOST" <ORAPOST@santandersupernet.com>
> Reply-To: ss@lists.tapr.org
> To: "TAPR Spread Spectrum Special Interest Group" <ss>
>
> The included message could not be delivered to the following invalid mail names. Please verify these
names and try them again.

>
> Bad name: eb7cjo
>
>   ---
>
> Subject: [ss] Return Message
> Date: 09 Jul 99 10:22:24
> From: "ORAPOST" <ORAPOST@santandersupernet.com>
> Reply-To: ss@lists.tapr.org
> To: "TAPR Spread Spectrum Special Interest Group" <ss>
>
> The included message could not be delivered to the following invalid mail names. Please verify these
names and try them again.
>
> Bad name: eb7cjo
>
>   ---
>
> Subject: [ss] Return Message
> Date: 09 Jul 99 10:17:15
> From: "ORAPOST" <ORAPOST@santandersupernet.com>
> Reply-To: ss@lists.tapr.org
> To: "TAPR Spread Spectrum Special Interest Group" <ss>
>
> The included message could not be delivered to the following invalid mail names. Please verify these
names and try them again.
>
> Bad name: eb7cjo
>
>   ---
>
> Subject: [ss] Return Message
> Date: 09 Jul 99 10:11:08
> From: "ORAPOST" <ORAPOST@santandersupernet.com>
> Reply-To: ss@lists.tapr.org
> To: "TAPR Spread Spectrum Special Interest Group" <ss>
>
> The included message could not be delivered to the following invalid mail names. Please verify these
names and try them again.
>
> Bad name: eb7cjo
>
>   ---
>
> Subject: [ss] Return Message
> Date: 09 Jul 99 10:07:03
> From: "ORAPOST" <ORAPOST@santandersupernet.com>
> Reply-To: ss@lists.tapr.org
> To: "TAPR Spread Spectrum Special Interest Group" <ss>
>
> The included message could not be delivered to the following invalid mail names. Please verify these
names and try them again.
>
> Bad name: eb7cjo
>
>   ---
>
> Subject: [ss] Return Message
> Date: 09 Jul 99 10:01:51
> From: "ORAPOST" <ORAPOST@santandersupernet.com>
> Reply-To: ss@lists.tapr.org
> To: "TAPR Spread Spectrum Special Interest Group" <ss>
>
> The included message could not be delivered to the following invalid mail names. Please verify these
names and try them again.
>
> Bad name: eb7cjo
>
>   ---
>
> Subject: [ss] Return Message
> Date: 09 Jul 99 09:56:42
> From: "ORAPOST" <ORAPOST@santandersupernet.com>
> Reply-To: ss@lists.tapr.org
> To: "TAPR Spread Spectrum Special Interest Group" <ss>
>
> The included message could not be delivered to the following invalid mail names. Please verify these
names and try them again.
>

> Bad name: eb7cjo
>
>   ---
>
> Subject: [ss] Return Message
> Date: 09 Jul 99 09:51:37
> From: "ORAPOST" <ORAPOST@santandersupernet.com>
> Reply-To: ss@lists.tapr.org
> To: "TAPR Spread Spectrum Special Interest Group" <ss>
>
> The included message could not be delivered to the following invalid mail names. Please verify these
names and try them again.
>
> Bad name: eb7cjo
>
>   ---
>
> Subject: [ss] Return Message
> Date: 09 Jul 99 09:46:31
> From: "ORAPOST" <ORAPOST@santandersupernet.com>
> Reply-To: ss@lists.tapr.org
> To: "TAPR Spread Spectrum Special Interest Group" <ss>
>
> The included message could not be delivered to the following invalid mail names. Please verify these
names and try them again.
>
> Bad name: eb7cjo
>
>   ---
>
> Subject: [ss] Return Message
> Date: 09 Jul 99 09:40:20
> From: "ORAPOST" <ORAPOST@santandersupernet.com>
> Reply-To: ss@lists.tapr.org
> To: "TAPR Spread Spectrum Special Interest Group" <ss>
>
> The included message could not be delivered to the following invalid mail names. Please verify these
names and try them again.
>
> Bad name: eb7cjo
>
>   ---
>
> Subject: [ss] RE: Question
> Date: 09 Jul 99 09:40:14
> From: Nacim rebani <nacim_rebani@yahoo.com>
> Reply-To: ss@lists.tapr.org
> To: "TAPR Spread Spectrum Special Interest Group" <ss>
>
>   Hello Christopher,
>
>   I thank you for the interest which you carry to my
> question.
> In my project, i use only the data . My objective is to propose a
> network management for the engines of freight.
> My problem is a problem of hardware and not software. I will wish to
> know if networks of this type exists at the different one.
> Can you help me after that.
>
> Regards.
> Nacim.
>
> --- Christopher Wolff <chris@turbonet.net> a écrit:
> > Hello Nacim,
> >
> > This sort of connectivity should be a relatively
> > straightforward solution,
> > even at 750 meters. Are you attempting to share
> > voice or data
> > communications with this system? We may be able to
> > configure a voice over
> > IP solution for you to fulfill this. Please contact
> > me off list at
> > chris@turbonet.net for further discussion.
> >
> > Regards,
> > Christopher
> >
> > -----Original Message-----

> > From: bounce-ss-9352@lists.tapr.org
> > [mailto:bounce-ss-9352@lists.tapr.org]On Behalf Of
> > Nacim rebani
> > Sent: Tuesday, July 06, 1999 1:25 AM
> > To: TAPR Spread Spectrum Special Interest Group
> > Subject: [ss] Question
> >
> >
> >
> > Hello,
> >
> > I'm a student who works for the french railway
> > operator (SNCF). For the
> > study I'm working on, I need to know if it is
> > possible to connect by
> > spread spectrum radio two locomotives distant of 750
> > meters.
> > I have worked for 4 months on the problem. But I
> > can't find a spread spectrum product which allows
> > two locomotives,
> > equiped with directing antenna, to communicate.
> >
> > If you have any question about it, don't hesitate to
> > contact me.
> >
> >
> >
> > ____
> > Do You Yahoo!?
> > Get your free @yahoo.com address at
> > http://mail.yahoo.com
> >
> >
> > ---
> > You are currently subscribed to ss as:
> > chris@turbonet.net
> > To unsubscribe send a blank email to
> > leave-ss-6751T@lists.tapr.org
> >
> >
> > ---
> > You are currently subscribed to ss as:
> > nacim_rebani@yahoo.com
> > To unsubscribe send a blank email to
> > leave-ss-6751T@lists.tapr.org
> >
> >
>
> ____
> Do You Yahoo!?
> Get your free @yahoo.com address at http://mail.yahoo.com
>
> ---
> You are currently subscribed to ss as: EB7CJO@SANTANDERSUPERNET.COM
> To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

---
You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

73. [ss] Return Message

From: "ORAPOST" <ORAPOST@santandersupernet.com>
Date: 09 Jul 99 13:58:04 +0200
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-29366-1999.07.09-07.08.24--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

The included message could not be delivered to the following invalid mail names. Please verify these names and try them again.

Bad name: eb7cjo

74. [ss] Re: Return Message

From: "Kang Hyun" <kanghyun@dongaelec.co.kr>
Date: Fri, 9 Jul 1999 21:24:52 +0900

To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-29370-1999.07.09-07.34.13--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

please....

>From   : ORAPOST <ORAPOST@santandersupernet.com>
To   : TAPR Spread Spectrum Special Interest Group <ss@lists.tapr.org>
Date   : July 9,1999
Subject: [ss] Return Message

>The included message could not be delivered to the following invalid
>mail names. Please verify these names and try them again.
>
>Bad name: eb7cjo
>
ÿÿØ¢æ«yË«-éí□+.nÇ+□·□¶□,jÏåÊ¸¬þËÿµªkþ□àN□§²æìr¸□zÇ§u¦åjy□¨¥¶□^j÷ÿ²Ïúï□SþX¬¶Ïíj□ÿ

75. [ss] RE: Return Message (ad infinitum)

From: "Rob Wittner" <rmw@rwa-inc.com>
Date: Fri, 9 Jul 1999 08:59:12 -0400
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-29392-1999.07.09-08.07.07--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Is the listmeister looking into suppressing these snowballing e-mail
bounces? The last one I received totaled more than 137K. I had to download
almost 2.3MB worth of these things this morning over my crummy dial-up
line...

     -Rob
      KZ5RW

-----Original Message-----
From: bounce-ss-7170@lists.tapr.org
[mailto:bounce-ss-7170@lists.tapr.org]On Behalf Of ORAPOST
Sent: Friday, July 09, 1999 7:58 AM
To: TAPR Spread Spectrum Special Interest Group
Subject: [ss] Return Message

The included message could not be delivered to the following invalid mail
names. Please verify these names and try them again.

Bad name: eb7cjo

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

76. [ss] Bounced Message

From: Greg Jones <wd5ivd@tapr.org>
Date: Fri, 9 Jul 1999 08:40:31 -0500
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-29403-1999.07.09-08.52.11--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

The list corrected itself before I saw the problem this morning.

The user has been put on hold, so it has stopped.

Since TAPR implemented the new list server earlier this year, the amount of
these types of messages have dropped to zero until today and the amount of
time I use spend each day has also gone to zero. A good purchase both ways
:-)

Sorry this one got through -- just a rare case.

Cheers - Greg

Greg Jones, WD5IVD   Austin, Texas
wd5ivd@tapr.org   http://www.tapr.org/~wd5ivd

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

77. [ss] Lyris can't detect mail looping ?

From: Paulus Suryono Adisoemarta <paulus@nextpc.pe.ttu.edu>
Date: Fri, 9 Jul 1999 09:10:11 -0500 (CDT)
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-29408-1999.07.09-09.17.54--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Sigh :(

Why the mailing list manager (Lyris) can't detect that
the ORAPOST email has already thru the the mailing list manager hence
that mail is a loop, hence block it ?
For example by looking at a specific line such as the
"Li*t-Software:Ly*is Server version 3.0",
similar to the trick that ezmlm uses.

73 de Paulus N5SNN / YG1QN
(ducking for the email snowball again ;)

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

78. [ss] Roaming SS node data internetwork idea (was RE: Question)

From: Jeremy McMillan <mcmillan@cboe.com>
Date: Fri, 09 Jul 1999 12:45:39 -0500
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Cc: TAPR Netsig <netsig@tapr.org>
Message-ID: <LYR6751-29422-1999.07.09-12.49.40--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Since this SS question came out, I had a burning desire to bounce an
idea off of these lists. Consider this a request for comment.

I ride Amtrak a lot, and I thought that trains would likely do cells
with special antennae for bidirectional coverage (you can point two
narrow beams down the track in either direction. The problem is, over
those distances, you would have to implement an *EXPANSIVE/EXPENSIVE*
single-mode fiber-optic backbone, or double up the density of your cells
and trust them to do layer-3 forwarding (very slowly) down the line.

I think the solution is to interconnect the trains with dynamic-IP at
layer 4, and maintain connectivity (tolerant to frequent disconnections)
at upper layers. That way, all links between the SS stations and the
central office can exist independant of physical media. You could even
have the SS repeaters dial out over a phone line when they detect a
train within range.

You could do a quick proof-of-concept of the ULP operation by setting up
an IRC server at the central office, and hacking up IRC bots (ie.
eggdrop --very powerful middleware) to communicate on the backend via
TCP socket. That backend socket could tunnel PPP, and give you a
seamless *looking* mobile IP network.

It would not be fast, but it would handle roaming across multiple
disjoint IP subnets, and it would do it with minimal coding, and you
could do it wih off-the-shelf commercial SS radio briges.

Nacim rebani wrote:
>
>   Hello Christopher,
>
>   I thank you for the interest which you carry to my
> question.
> In my project, i use only the data . My objective is to propose a
> network management for the engines of freight.
> My problem is a problem of hardware and not software. I will wish to
> know if networks of this type exists at the different one.
> Can you help me after that.
>
> Regards.
> Nacim.

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

79. [ss] Re: Lyris can't detect mail looping ?

From: "Jim K." <jimbok@i-2000.com>
Date: Fri, 9 Jul 1999 16:48:28 -0400
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-29452-1999.07.09-15.53.10--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

HI,
    I also got the 2.3Mb of messages, but thats ok, this list has always
worked great so I have no complaints. (if only the pic sig list used the
same program!!!) But I would like to know what happened. Did someone
intentionally create a message that can "confuse" a list server to keep
sending? Or is this just a bug in the software? I plan to set up a list
server soon (using a linux box that I have no time to keep an eye on) and
want to be aware of such problems.

    I guess Lyris is the mail program?

In the dark again,
    Jim - KB2UOI

 Jim Krutzler A.K.A. "Jimbo K"

 Home Page:
 http://www.i2.i-2000.com/~jimbok

 mailto:jimbok@i-2000.com   mailto:kb2uoi@amsat.org
 Ham Radio call: KB2UOI Phone/Fax 732.248.4479

 Attitude is Everything!
-----Original Message-----
From: Paulus Suryono Adisoemarta <paulus@nextpc.pe.ttu.edu>
To: TAPR Spread Spectrum Special Interest Group <ss@lists.tapr.org>
Date: Friday, July 09, 1999 10:11 AM
Subject: [ss] Lyris can't detect mail looping ?

>
>
>Sigh :(
>
>Why the mailing list manager (Lyris) can't detect that
>the ORAPOST email has already thru the the mailing list manager hence
>that mail is a loop, hence block it ?
>For example by looking at a specific line such as the
>"Li*t-Software:Ly*is Server version 3.0",
>similar to the trick that ezmlm uses.
>
>73 de Paulus N5SNN / YG1QN
>(ducking for the email snowball again ;)
>
>
>
>---
>You are currently subscribed to ss as: JIMBOK@I-2000.COM
>To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org
>

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

80. [ss] Re: Lyris can't detect mail looping ?

From: Greg Jones <wd5ivd@tapr.org>
Date: Fri, 9 Jul 1999 20:14:18 -0500
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-29478-1999.07.09-20.33.04--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

After a little research here is the story on the loop as told by Lee,
N5LYT, who maintains the system for TAPR.

Greg

Because the return message was completely out of spec. The main reason is
that the screwed-up mailer at santandersupernet.com sent the bounce
message to the return address in the header, not in the envelope as
required by RFC821.

Second, the error message did not contain a null return-path in the
envelope as required by RFC821.

In short, the broken mailer at santandersupernet.com made it impossible
for Lyris to determine that the message was an error message. Therefore,
since it was addressed to the list, it was treated like any other message
and posted. Lyris is reasonably good at catching these kinds of things,
but there's always a MTA out there somewhere that is too broken for Lyris
to handle.

I may send a message to the postmaster at santandersupernet.com and block
that domain from the list system to avoid this problem in the future.

Lee

>HI,
>   I also got the 2.3Mb of messages, but thats ok, this list has always
>worked great so I have no complaints. (if only the pic sig list used the
>same program!!!) But I would like to know what happened. Did someone
>intentionally create a message that can "confuse" a list server to keep
>sending? Or is this just a bug in the software? I plan to set up a list
>server soon (using a linux box that I have no time to keep an eye on) and
>want to be aware of such problems.
>
>   I guess Lyris is the mail program?
>
>In the dark again,
>   Jim - KB2UOI
>

Greg Jones, WD5IVD   Austin, Texas
wd5ivd@tapr.org   http://www.tapr.org/~wd5ivd

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

81. [ss] Re: Roaming SS node data internetwork idea (was RE: Question)

From: Eric Glover <compuman@zip.eecs.umich.edu>
Date: Fri, 9 Jul 1999 23:41:28 -0400 (EDT)
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-29490-1999.07.09-22.50.51--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

First, I am not that knowledgable with actual real life radio systems so
if this is dumb please ignore (or tell me personally)..

Anyway in the Northeast most of the Amtrack lines are electric. The new
high-speed rail (150 mph) system will soon be operational from Washington
DC through Boston (100% electric). I wonder if it is possible to either
use the power lines as antenna, or even better to directly carry the data?

Might it be possible to simply direct the signals through the lines
without actually contacting them? That would allow a net connection at
each train staion or every power substation, which are hopefully often
enough? Comments? Thoughts?

Also, if the trains are stable enough is it possible to use a high-speed
return path such as DSS? Or some other type of commercial asymmetric
connection?

Also, in more dense areas you have stations which are less than 20 miles
apart, maybe we could have wireless IP conntecting to the stations?

- -
...an enormous body of information science literature is based on work
that *uses* relevance, without throughly understanding what it
means ... without an understanding of what relevance means *to*
users, it seems difficult to imagine how a system can retrieve relevant

information *for* users. -- Schamber, 1990
- -
                  Eric Glover -- compuman@eecs.umich.edu
             Grad student hoping to finish before the year 2000!

On Fri, 9 Jul 1999, Jeremy McMillan wrote:

> Since this SS question came out, I had a burning desire to bounce an
> idea off of these lists. Consider this a request for comment.
>
> I ride Amtrak a lot, and I thought that trains would likely do cells
> with special antennae for bidirectional coverage (you can point two
> narrow beams down the track in either direction. The problem is, over
> those distances, you would have to implement an *EXPANSIVE/EXPENSIVE*
> single-mode fiber-optic backbone, or double up the density of your cells
> and trust them to do layer-3 forwarding (very slowly) down the line.
>
> I think the solution is to interconnect the trains with dynamic-IP at
> layer 4, and maintain connectivity (tolerant to frequent disconnections)
> at upper layers. That way, all links between the SS stations and the
> central office can exist independant of physical media. You could even
> have the SS repeaters dial out over a phone line when they detect a
> train within range.
>
> You could do a quick proof-of-concept of the ULP operation by setting up
> an IRC server at the central office, and hacking up IRC bots (ie.
> eggdrop --very powerful middleware) to communicate on the backend via
> TCP socket. That backend socket could tunnel PPP, and give you a
> seamless *looking* mobile IP network.
>
> It would not be fast, but it would handle roaming across multiple
> disjoint IP subnets, and it would do it with minimal coding, and you
> could do it wih off-the-shelf commercial SS radio briges.
>
> Nacim rebani wrote:
> >
> >   Hello Christopher,
> >
> >   I thank you for the interest which you carry to my
> > question.
> > In my project, i use only the data . My objective is to propose a
> > network management for the engines of freight.
> > My problem is a problem of hardware and not software. I will wish to
> > know if networks of this type exists at the different one.
> > Can you help me after that.
> >
> > Regards.
> > Nacim.
>
> ---
> You are currently subscribed to ss as: COMPUMAN@EECS.UMICH.EDU
> To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org
>
>

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

82. [ss] RE: Question

From: chris@turbonet.net (Christopher Wolff)
Date: Sat, 10 Jul 1999 00:02:42 -0700
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-29517-1999.07.10-02.11.07--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

The problem with using spread spectrum in your application would be the
doppler shift between moving locomotives. The shift prevents connectivity
between radios moving at greater speeds than 20 miles per hour. However,
this would not be an issue if the relative speed of the locomotives did not
exceed 20 miles per hour and the distance between radios did not exceed the
maximum range of the radio. We've tested spread spectrum links out to 30
miles.

We would be glad to help you work on this type of solution based on our
desire to see this technology applied in the industrial and public sector.
The key to this implementation is in the antenna engineering, as the radio
hardware implementation is pretty straightforward. We manufacture many

different types of antennae, ranging from small, 3db patch units, to 17db
sectored panels for metropolitan spread spectrum cell deployment.

Thanks,
Christopher

-----Original Message-----
From: bounce-ss-9352@lists.tapr.org
[mailto:bounce-ss-9352@lists.tapr.org]On Behalf Of Nacim rebani
Sent: Friday, July 09, 1999 12:40 AM
To: TAPR Spread Spectrum Special Interest Group
Subject: [ss] RE: Question

Hello Christopher,

I thank you for the interest which you carry to my
question.
In my project, i use only the data . My objective is to propose a
network management for the engines of freight.
My problem is a problem of hardware and not software. I will wish to
know if networks of this type exists at the different one.
Can you help me after that.

Regards.
Nacim.

--- Christopher Wolff <chris@turbonet.net> a écrit:
> Hello Nacim,
>
> This sort of connectivity should be a relatively
> straightforward solution,
> even at 750 meters. Are you attempting to share
> voice or data
> communications with this system? We may be able to
> configure a voice over
> IP solution for you to fulfill this. Please contact
> me off list at
> chris@turbonet.net for further discussion.
>
> Regards,
> Christopher
>
> -----Original Message-----
> From: bounce-ss-9352@lists.tapr.org
> [mailto:bounce-ss-9352@lists.tapr.org]On Behalf Of
> Nacim rebani
> Sent: Tuesday, July 06, 1999 1:25 AM
> To: TAPR Spread Spectrum Special Interest Group
> Subject: [ss] Question
>
>
>
> Hello,
>
> I'm a student who works for the french railway
> operator (SNCF). For the
> study I'm working on, I need to know if it is
> possible to connect by
> spread spectrum radio two locomotives distant of 750
> meters.
> I have worked for 4 months on the problem. But I
> can't find a spread spectrum product which allows
> two locomotives,
> equiped with directing antenna, to communicate.
>
> If you have any question about it, don't hesitate to
> contact me.
>
>
>
> _____
> Do You Yahoo!?
> Get your free @yahoo.com address at
> http://mail.yahoo.com
>
>
> ---
> You are currently subscribed to ss as:

> chris@turbonet.net
> To unsubscribe send a blank email to
> leave-ss-6751T@lists.tapr.org
>
>
> ---
> You are currently subscribed to ss as:
> nacim_rebani@yahoo.com
> To unsubscribe send a blank email to
> leave-ss-6751T@lists.tapr.org
>
>

_____
Do You Yahoo!?
Get your free @yahoo.com address at http://mail.yahoo.com

You are currently subscribed to ss as: chris@turbonet.net
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

---
You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

83. [ss] RE: Question

From: Dirk Koopman <djk@tobit.co.uk>
Date: Sat, 10 Jul 1999 13:41:05 +0100 (BST)
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-29524-1999.07.10-07.51.50--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

On 10-Jul-99 Christopher Wolff wrote:
> The problem with using spread spectrum in your application would be the
> doppler shift between moving locomotives. The shift prevents connectivity
> between radios moving at greater speeds than 20 miles per hour. However,
> this would not be an issue if the relative speed of the locomotives did not
> exceed 20 miles per hour and the distance between radios did not exceed the
> maximum range of the radio. We've tested spread spectrum links out to 30
> miles.

Is this because you are thinking in terms of FHSS? Is DSS as succeptable to
doppler as FHSS?

Dirk G1TLH

Dirk-Jan Koopman, Tobit Computer Co Ltd
At the source of every error which is blamed on the computer you will find
at least two human errors, including the error of blaming it on the computer.

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

84. [ss] RE: Question

From: "Rochford, Richard E (Dick)" <rerochford@lucent.com>
Date: Sat, 10 Jul 1999 11:04:02 -0400
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-29541-1999.07.10-10.11.42--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Relative velocity certainly makes the problem more difficult; however, IS
95 is a DS system and it works at speeds above 20 mph. IS 95 also has the
ad vantage of having all the base stations referenced to GPS and
stationary. Using a reference like GPS may make the task of synchronization
easier for this type of application.

Richard E. Rochford

        -----Original Message-----
        From: chris@turbonet.net [SMTP:chris@turbonet.net]
        Sent: Saturday, July 10, 1999 3:03 AM
        To: TAPR Spread Spectrum Special Interest Group
        Subject: [ss] RE: Question

The problem with using spread spectrum in your application would be the doppler shift between moving locomotives. The shift prevents connectivity between radios moving at greater speeds than 20 miles per hour. However, this would not be an issue if the relative speed of the locomotives did not exceed 20 miles per hour and the distance between radios did not exceed the maximum range of the radio. We've tested spread spectrum links out to 30 miles.

We would be glad to help you work on this type of solution based on our desire to see this technology applied in the industrial and public sector. The key to this implementation is in the antenna engineering, as the radio hardware implementation is pretty straightforward. We manufacture many different types of antennae, ranging from small, 3db patch units, to 17db sectored panels for metropolitan spread spectrum cell deployment.

Thanks,
Christopher

-----Original Message-----
From: bounce-ss-9352@lists.tapr.org
[mailto:bounce-ss-9352@lists.tapr.org]On Behalf Of Nacim rebani
Sent: Friday, July 09, 1999 12:40 AM
To: TAPR Spread Spectrum Special Interest Group
Subject: [ss] RE: Question

Hello Christopher,

I thank you for the interest which you carry to my question.
In my project, i use only the data . My objective is to propose a network management for the engines of freight.
My problem is a problem of hardware and not software. I will wish to know if networks of this type exists at the different one.
Can you help me after that.

Regards.
Nacim.

--- Christopher Wolff <chris@turbonet.net> a écrit:
> Hello Nacim,
>
> This sort of connectivity should be a relatively
> straightforward solution,
> even at 750 meters. Are you attempting to share
> voice or data
> communications with this system? We may be able to
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>
> Regards,
> Christopher
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> -----Original Message-----
> From: bounce-ss-9352@lists.tapr.org
> [mailto:bounce-ss-9352@lists.tapr.org]On Behalf Of
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> Hello,
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> I'm a student who works for the french railway
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> meters.
> I have worked for 4 months on the problem. But I
> can't find a spread spectrum product which allows
> two locomotives,
> equiped with directing antenna, to communicate.
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> If you have any question about it, don't hesitate to
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>
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> Do You Yahoo!?
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> http://mail.yahoo.com
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> chris@turbonet.net
> To unsubscribe send a blank email to
> leave-ss-6751T@lists.tapr.org
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> ---
> You are currently subscribed to ss as:
> nacim_rebani@yahoo.com
> To unsubscribe send a blank email to
> leave-ss-6751T@lists.tapr.org
>
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_____
Do You Yahoo!?
Get your free @yahoo.com address at http://mail.yahoo.com

You are currently subscribed to ss as: chris@turbonet.net
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

---
You are currently subscribed to ss as: R.E.ROCHFORD@LUCENT.COM
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

---
You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

85. [ss] RE: Question

From: chris@turbonet.net (Christopher Wolff)
Date: Sat, 10 Jul 1999 13:33:17 -0700
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-29575-1999.07.10-15.41.27--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

According to Lucent and Harris, they built the 802.11 standard around the
problem of running DSSS systems over 20 mph in a roaming situation. I
haven't tested this theory yet but I can see from an engineering perspective
how it could be an issue.

-----Original Message-----
From: bounce-ss-9352@lists.tapr.org
[mailto:bounce-ss-9352@lists.tapr.org]On Behalf Of Dirk Koopman
Sent: Saturday, July 10, 1999 5:41 AM
To: TAPR Spread Spectrum Special Interest Group
Subject: [ss] RE: Question

On 10-Jul-99 Christopher Wolff wrote:
> The problem with using spread spectrum in your application would be the

> doppler shift between moving locomotives. The shift prevents connectivity
> between radios moving at greater speeds than 20 miles per hour. However,
> this would not be an issue if the relative speed of the locomotives did
not
> exceed 20 miles per hour and the distance between radios did not exceed
the
> maximum range of the radio. We've tested spread spectrum links out to 30
> miles.

Is this because you are thinking in terms of FHSS? Is DSS as succeptable to
doppler as FHSS?

Dirk G1TLH

Dirk-Jan Koopman, Tobit Computer Co Ltd
At the source of every error which is blamed on the computer you will find
at least two human errors, including the error of blaming it on the
computer.

You are currently subscribed to ss as: chris@turbonet.net
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

---
You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

86. [ss] RF Micro Devices (RFMD) in the News

From: "Steven R. Bible" <n7hpr@amsat.org>
Date: Sun, 11 Jul 1999 18:07:51 -0400
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-29692-1999.07.11-17.15.10--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Doug Gibbs, W8NFT, tipped me on this news item available from

    http://news.rfglobalnet.com/industry-news/19990628-6925.html

Thought those on the list would be interested as well.

- Steve, N7HPR

RFMD Delivers Spread-Spectrum Receiver/Transmitter, Wins Phone Order
Greensboro, NC-based RF Micro Devices (RFMD) has introduced the RF2908 and
the RF2909, a spread-spectrum receiver and transmitter designed for systems
operating in the 902 to 928 MHz ISM band.

The RF2908 is a monolithic integrated receiver. The part includes a direct
conversion receiver, a quadrature demodulator, dual IF amplifiers (with
gain control and RSSI), on-chip programmable baseband filters, dual data
comparators, and a serially programmable 86-channel phase-locked loop (PLL)
frequency synthesizer. Applications for the RF2908 include digital cordless
telephones, secure communication links, wireless local-area networks
(WLANs), inventory tracking, wireless security and battery-powered
applications.

Designed to operate with the RF2908, the RF2909 is a monolithic integrated
transmitter IC capable of universal direct modulation in a variety of
modulation formats and compound carriers. The transmitter has two power
control modes. In the first mode, two inputs can be controlled digitally
for stepping output power 1, 10, or 70 mW. In the second mode, the output
level can be adjusted by an analog input from 1 to 80 mW. Applications for
the RF2909 include direct-sequence spread-spectrum systems, spread-spectrum
cordless phones, portable battery-powered equipment, and 915 MHz.

The RF2908 is supplied in a 48-lead LQFP and is offered at $5.25 in 10,000
quantities. The RF2909, on the other hand, is delivered in a 24-lead SSOP
and is priced at $2.35 in 10,000 quantities.

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

87. [ss] Re: Lyris can't detect mail looping ?

From: "Glenn S. Tenney KCTJ" <tenney@think.org>
Date: Sun, 11 Jul 1999 13:28:44 -0700
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-29700-1999.07.11-18.55.25--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

At 6:14 PM -0700 7/9/99, Greg Jones wrote:
>Because the return message was completely out of spec. The main reason is
>that the screwed-up mailer at santandersupernet.com sent the bounce
>message to the return address in the header, not in the envelope as
>required by RFC821.

My recollection is that errors should go to the "Errors-To:" if present, or
the "Reply-To:" if not...   So, it seems that part of the problem is that
Lee needs to add the proper "Errors-To:" header to the list...

p.s.

I hate lists that prepend something to the subject line ... ala "[ss]"
which makes it IMPOSSIBLE to effectively sort by subject to develop a
thread since the "re:" gets replicated multiple times.

Glenn Tenney KCTJ   Fantasia Systems Inc.
tenney@think.org   http://www.think.org/
Voice: (650) 574-3420   Fax: (650) 574-0546   Ham radio: AA6ER

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

88. [ss] RE: Question

From: Bruce <bruce@westcut.com>
Date: Sun, 11 Jul 1999 21:03:36 -0500
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-29708-1999.07.11-21.11.27--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

If you stop and think about it, the GPS system is also an example of a spread specturm that achieves synchronization at relative velocities MUCH greater than 20MPH. Doppler correction (and code phase correction) are all covered in the literature for GPS chip-sets.

Bruce K9BC

From: Rochford, Richard E (Dick)[SMTP:rerochford@lucent.com]
Sent: Saturday, July 10, 1999 10:04 AM
To: TAPR Spread Spectrum Special Interest Group
Subject: [ss] RE: Question

Relative velocity certainly makes the problem more difficult; however, IS
95 is a DS system and it works at speeds above 20 mph. IS 95 also has the
ad vantage of having all the base stations referenced to GPS and
stationary. Using a reference like GPS may make the task of synchronization
easier for this type of application.

Richard E. Rochford

        -----Original Message-----
        From: chris@turbonet.net [SMTP:chris@turbonet.net]
        Sent: Saturday, July 10, 1999 3:03 AM
        To: TAPR Spread Spectrum Special Interest Group
        Subject: [ss] RE: Question

        The problem with using spread spectrum in your application would be
the
        doppler shift between moving locomotives. The shift prevents
connectivity
        between radios moving at greater speeds than 20 miles per hour.

However,
this would not be an issue if the relative speed of the locomotives
did not
exceed 20 miles per hour and the distance between radios did not
exceed the
maximum range of the radio. We've tested spread spectrum links out
to 30
miles.

We would be glad to help you work on this type of solution based on
our
desire to see this technology applied in the industrial and public
sector.
The key to this implementation is in the antenna engineering, as
the radio
hardware implementation is pretty straightforward. We manufacture
many
different types of antennae, ranging from small, 3db patch units, to
17db
sectored panels for metropolitan spread spectrum cell deployment.

Thanks,
Christopher

-----Original Message-----
From: bounce-ss-9352@lists.tapr.org
[mailto:bounce-ss-9352@lists.tapr.org]On Behalf Of Nacim rebani
Sent: Friday, July 09, 1999 12:40 AM
To: TAPR Spread Spectrum Special Interest Group
Subject: [ss] RE: Question

Hello Christopher,

I thank you for the interest which you carry to my
question.
In my project, i use only the data . My objective is to propose a
network management for the engines of freight.
My problem is a problem of hardware and not software. I will wish to
know if networks of this type exists at the different one.
Can you help me after that.

Regards.
Nacim.

--- Christopher Wolff <chris@turbonet.net> a écrit:
> Hello Nacim,
>
> This sort of connectivity should be a relatively
> straightforward solution,
> even at 750 meters. Are you attempting to share
> voice or data
> communications with this system? We may be able to
> configure a voice over
> IP solution for you to fulfill this. Please contact
> me off list at
> chris@turbonet.net for further discussion.
>
> Regards,
> Christopher
>
> -----Original Message-----
> From: bounce-ss-9352@lists.tapr.org
> [mailto:bounce-ss-9352@lists.tapr.org]On Behalf Of
> Nacim rebani
> Sent: Tuesday, July 06, 1999 1:25 AM
> To: TAPR Spread Spectrum Special Interest Group
> Subject: [ss] Question
>
>
>
> Hello,
>
> I'm a student who works for the french railway
> operator (SNCF). For the
> study I'm working on, I need to know if it is
> possible to connect by
> spread spectrum radio two locomotives distant of 750
> meters.

> I have worked for 4 months on the problem. But I
> can't find a spread spectrum product which allows
> two locomotives,
> equiped with directing antenna, to communicate.
>
> If you have any question about it, don't hesitate to
> contact me.
>
>
>
> _____
> Do You Yahoo!?
> Get your free @yahoo.com address at
> http://mail.yahoo.com
>
>
> ---
> You are currently subscribed to ss as:
> chris@turbonet.net
> To unsubscribe send a blank email to
> leave-ss-6751T@lists.tapr.org
>
>
> ---
> You are currently subscribed to ss as:
> nacim_rebani@yahoo.com
> To unsubscribe send a blank email to
> leave-ss-6751T@lists.tapr.org
>
>

_____
Do You Yahoo!?
Get your free @yahoo.com address at http://mail.yahoo.com

You are currently subscribed to ss as: chris@turbonet.net
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

---
You are currently subscribed to ss as: R.E.ROCHFORD@LUCENT.COM
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

---
You are currently subscribed to ss as: XBRUCEX@POPMAIL.MCS.NET
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

89. [ss] RE: Question

From: chris@turbonet.net (Christopher Wolff)
Date: Sun, 11 Jul 1999 21:17:57 -0700
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-29729-1999.07.11-23.26.05--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

If anyone has integrated GPS in a mobile spread spectrum solution that
happens to conform to the DSSS 802.11 standard, we need to talk! I would
love that kind of solution.

Regards,
Chris

-----Original Message-----
From: bounce-ss-9352@lists.tapr.org
[mailto:bounce-ss-9352@lists.tapr.org]On Behalf Of Bruce
Sent: Sunday, July 11, 1999 7:04 PM
To: TAPR Spread Spectrum Special Interest Group
Subject: [ss] RE: Question

If you stop and think about it, the GPS system is also an example of a
spread specturm that achieves synchronization at relative velocities MUCH
greater than 20MPH. Doppler correction (and code phase correction) are all
covered in the literature for GPS chip-sets.

Bruce K9BC

From: Rochford, Richard E (Dick)[SMTP:rerochford@lucent.com]
Sent: Saturday, July 10, 1999 10:04 AM
To: TAPR Spread Spectrum Special Interest Group
Subject: [ss] RE: Question

Relative velocity certainly makes the problem more difficult; however, IS 95 is a DS system and it works at speeds above 20 mph. IS 95 also has the ad vantage of having all the base stations referenced to GPS and stationary. Using a reference like GPS may make the task of synchronization easier for this type of application.

Richard E. Rochford

-----Original Message-----
From: chris@turbonet.net [SMTP:chris@turbonet.net]
Sent: Saturday, July 10, 1999 3:03 AM
To: TAPR Spread Spectrum Special Interest Group
Subject: [ss] RE: Question

The problem with using spread spectrum in your application would be the doppler shift between moving locomotives. The shift prevents connectivity between radios moving at greater speeds than 20 miles per hour. However, this would not be an issue if the relative speed of the locomotives did not exceed 20 miles per hour and the distance between radios did not exceed the maximum range of the radio. We've tested spread spectrum links out to 30 miles.

We would be glad to help you work on this type of solution based on our desire to see this technology applied in the industrial and public sector. The key to this implementation is in the antenna engineering, as the radio hardware implementation is pretty straightforward. We manufacture many different types of antennae, ranging from small, 3db patch units, to 17db sectored panels for metropolitan spread spectrum cell deployment.

Thanks,
Christopher

-----Original Message-----
From: bounce-ss-9352@lists.tapr.org [mailto:bounce-ss-9352@lists.tapr.org]On Behalf Of Nacim rebani
Sent: Friday, July 09, 1999 12:40 AM
To: TAPR Spread Spectrum Special Interest Group
Subject: [ss] RE: Question

Hello Christopher,

I thank you for the interest which you carry to my question.
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My problem is a problem of hardware and not software. I will wish to know if networks of this type exists at the different one.
Can you help me after that.

Regards.
Nacim.

--- Christopher Wolff <chris@turbonet.net> a écrit:
> Hello Nacim,
>
> This sort of connectivity should be a relatively
> straightforward solution,
> even at 750 meters. Are you attempting to share
> voice or data
> communications with this system? We may be able to
> configure a voice over

> IP solution for you to fulfill this. Please contact
> me off list at
> chris@turbonet.net for further discussion.
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> Regards,
> Christopher
>
> -----Original Message-----
> From: bounce-ss-9352@lists.tapr.org
> [mailto:bounce-ss-9352@lists.tapr.org]On Behalf Of
> Nacim rebani
> Sent: Tuesday, July 06, 1999 1:25 AM
> To: TAPR Spread Spectrum Special Interest Group
> Subject: [ss] Question
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>
>
> Hello,
>
> I'm a student who works for the french railway
> operator (SNCF). For the
> study I'm working on, I need to know if it is
> possible to connect by
> spread spectrum radio two locomotives distant of 750
> meters.
> I have worked for 4 months on the problem. But I
> can't find a spread spectrum product which allows
> two locomotives,
> equiped with directing antenna, to communicate.
>
> If you have any question about it, don't hesitate to
> contact me.
>
>
>
> _____
> Do You Yahoo!?
> Get your free @yahoo.com address at
> http://mail.yahoo.com
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>
> ---
> You are currently subscribed to ss as:
> chris@turbonet.net
> To unsubscribe send a blank email to
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> To unsubscribe send a blank email to
> leave-ss-6751T@lists.tapr.org
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>

_____
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To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

---
You are currently subscribed to ss as: R.E.ROCHFORD@LUCENT.COM
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

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You are currently subscribed to ss as: XBRUCEX@POPMAIL.MCS.NET
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

---

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

90. [ss] Re: Roaming SS node data internetwork idea (was RE: Question)

From: Jeremy McMillan <mcmillan@cboe.com>
Date: Mon, 12 Jul 1999 09:56:30 -0500
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-29791-1999.07.12-09.59.46--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Eric Glover wrote:
>
> Anyway in the Northeast most of the Amtrack lines are electric. The new
> high-speed rail (150 mph) system will soon be operational from Washington
> DC through Boston (100% electric). I wonder if it is possible to either
> use the power lines as antenna, or even better to directly carry the data?

Outside the Northeast, Amtrak uses the hybrid Diesel/Electric on tracks
that are probably too grounded to get any data through.

> Also, if the trains are stable enough is it possible to use a high-speed
> return path such as DSS? Or some other type of commercial asymmetric
> connection?

Sattelites? Sure, that's work for the return path, but I hate asymmetric
media. The attraction I have to SS radio is that it allows peer to peer
operation.

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

91. [ss] Re: Roaming SS node data internetwork idea (was RE: Question)

From: Lyle Johnson <johnson@mmsi.com>
Date: Mon, 12 Jul 1999 08:11:20 -0700
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-29797-1999.07.12-10.19.23--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Jeremy McMillan wrote:
>
> Eric Glover wrote:
> >
> > Anyway in the Northeast most of the Amtrack lines are electric. The new
> > high-speed rail (150 mph) system will soon be operational from Washington
> > DC through Boston (100% electric). I wonder if it is possible to either
> > use the power lines as antenna, or even better to directly carry the data?
>
> Outside the Northeast, Amtrak uses the hybrid Diesel/Electric on tracks
> that are probably too grounded to get any data through.

Actually, most railways use the rails to both sense the presence of
trains (block signalling) and to communicate vital information to the
locomotives (vital in the railway sense). These are usually at a few
bits/second on "carriers" of a few tens of Hertz.

Lyle

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

92. [ss] Re: Roaming SS node data internetwork idea (was RE: Question)

From: Eric Glover <compuman@zip.eecs.umich.edu>
Date: Mon, 12 Jul 1999 11:29:53 -0400 (EDT)
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-29798-1999.07.12-10.39.07--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

> Eric Glover wrote:
> >
> > Anyway in the Northeast most of the Amtrack lines are electric. The new
> > high-speed rail (150 mph) system will soon be operational from Washington
> > DC through Boston (100% electric). I wonder if it is possible to either
> > use the power lines as antenna, or even better to directly carry the data?
>
> Outside the Northeast, Amtrak uses the hybrid Diesel/Electric on tracks
> that are probably too grounded to get any data through.

So how expensive/hard would it be in the areas where there are elctric
tracks to use the power lines to extend the range? Or is that silly?

> > Also, if the trains are stable enough is it possible to use a high-speed
> > return path such as DSS? Or some other type of commercial asymmetric
> > connection?
>
> Sattelites? Sure, that's work for the return path, but I hate asymmetric
> media. The attraction I have to SS radio is that it allows peer to peer
> operation.

Although peer to peer is nice, using an asymmetric return path will allow
high speed access, even in the case of slow upstream. There is nothing
stopping a combination of both SS downstream, and some other high speed.
The point being high-speed return paths (such as Satellite) already exist,
and are arguably cheap, and widespread. It is much easier to work on one
way transmit from train to station, than on the round trip...

Also, isnt the FHSS (is that right) project trying to get 30 km range with
1 W SS on 900 Mhz, at around 512 Kbps? Why can't that be used? If we used
an omni directional antenna instead of directional, if we could get 10 km,
then having one receiver per station might cover much of the denser
populated areas.

Thanks for the reply, and again I appologize if what I am saying seems
kind of ignorant.

CYA,
Eric

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

93. [ss] Re: ss

From: Ray Vaughan <ray@rayvaughan.com>
Date: Mon, 12 Jul 1999 11:49:11 -0400
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-29800-1999.07.12-10.56.59--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

At 12:01 AM 7/12/99 -0500, you wrote:
>p.s.
>
>I hate lists that prepend something to the subject line ... ala "[ss]"
>which makes it IMPOSSIBLE to effectively sort by subject to develop a
>thread since the "re:" gets replicated multiple times.

Actually, the SS helps me sort things out. I wish every list had the list
name in the subject. I can sort the SS messages very easily to my SS
folder. Then I can sort them within the folder any way I wish. The free
version of Eudora is smart enough to not ignore RE when sorting by subject.
  I'm in at least 100 lists, so having the list name in the subject is real
important to me.

My only wish is that the ss (and the other TAPR lists) could be in square
brackets [ss] to match the defacto standard the other lists use.

Thanks

Ray J. Vaughan, MS, CBTE
KD4BBM
ray@rayvaughan.com
http://www.rayvaughan.com/

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

94. [ss] Re: ss

From: Bob Nielsen <nielsen@primenet.com>
Date: Mon, 12 Jul 1999 10:59:39 -0700
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-29822-1999.07.12-13.07.40--lyris.ss#tapr.org@lists.tapr.org>

Rendered body type: text/plain

On Mon, Jul 12, 1999 at 11:49:11AM -0400, Ray Vaughan wrote:
> At 12:01 AM 7/12/99 -0500, you wrote:
> >p.s.
> >
> >I hate lists that prepend something to the subject line ... ala "[ss]"
> >which makes it IMPOSSIBLE to effectively sort by subject to develop a
> >thread since the "re:" gets replicated multiple times.
>
> Actually, the SS helps me sort things out. I wish every list had the list
> name in the subject. I can sort the SS messages very easily to my SS
> folder. Then I can sort them within the folder any way I wish. The free
> version of Eudora is smart enough to not ignore RE when sorting by subject.
>   I'm in at least 100 lists, so having the list name in the subject is real
> important to me.
>
> My only wish is that the ss (and the other TAPR lists) could be in square
> brackets [ss] to match the defacto standard the other lists use.

Huh?

I see square brackets: Subject: [ss] Re: ss

Actually I think the list has only been doing this recently. I need to
go and change my .procmailrc filter to fit the current format.

Bob

--
Bob Nielsen   Internet: nielsen@primenet.com
Tucson, AZ   AMPRnet: w6swe@w6swe.ampr.org
DM42nh   http://www.primenet.com/~nielsen

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

95. [ss] Looking for a reasonable way to connect over about 3 km...

From: Eric Glover <compuman@zip.eecs.umich.edu>
Date: Mon, 12 Jul 1999 18:47:39 -0400 (EDT)
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-29844-1999.07.12-17.56.59--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I was wondering what kind of products (off the shelf) exist that are
reasonably priced which would let me be able to connect from an apartment
(with almost line of sight, a few trees and such in the way) to a
corporate LAN about 2-3 km away. Although I am connecting to a corporate
LAN this is for my personal use, and I will be paying out of my own
pocket, I will have permission from the Sys admin to do this (outside the
firewall if proper security can't be assured).

I want a point-to-point link (ideally encrypted), one computer on one
end, ethernet on the other (if necessary to connect to a computer serial
port on both ends I can do that too). Anything more than 100 Kbits/second
would be fine, but 1+ Mbits per second would be prefered. No need for
routing, just one MAC address on each end, static is also perfectly fine!
In fact if the system can be configured to BLOCK foreign MAC addresses
from communicating via this link, even better...

I have heard reports (on this list) of people using WaveLans at distances
of 10 KM, but is that practical, does that require expensive directional
antennas? (on both ends, and 100% unobstructed line of sight?)

Also, maybe TAPR (or someone on the list) should set up a FAQ on such
stuff -- including individual's comments. Since I have seen *many* such
questions on this list. I suspect collectively our experience with off the
shelf, and even homemade hardware would be valuable in some collection.

If noone else will do this, I *might* be able to collect comments. I am
even willing to write some CGI-scripts to allow TAPR members to enter
comments/info. (I might be able to run them off the Sun at school)...
Ideas?

Feel free to e-mail me privately -- compuman@eecs.umich.edu (or to the
list, use your discression)

Thanks,
Eric

- -
...an enormous body of information science literature is based on work
that *uses* relevance, without throughly understanding what it
means ... without an understanding of what relevance means *to*
users, it seems difficult to imagine how a system can retrieve relevant
information *for* users. -- Schamber, 1990
- -
Eric Glover -- compuman@eecs.umich.edu
Grad student hoping to finish before the year 2000!

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

96. [ss] Re: Looking for a reasonable way to connect over about 3 km...

From: Fred Treasure <fred@nfo.edu>
Date: Tue, 13 Jul 1999 08:50:07 -0600 (MDT)
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-29940-1999.07.13-09.57.41--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

>
> I have heard reports (on this list) of people using WaveLans at distances
> of 10 KM, but is that practical, does that require expensive directional
> antennas? (on both ends, and 100% unobstructed line of sight?)
>
I use old 915 MHz Wavelans at these distances with 12 element beams from
Antennex. Two or three kilometers should be easy. Having said that, I'll
qualify my optimism with the observation that if there is other 915 MHz
equipment operating in the area then the range and reliability is reduced
greatly. My worst link is only 3/4 miles with no obstructions. The
Freewave unit located near the WaveLan at one end causes the WaveLan a lot
of trouble, even when it isn't transmitting data. It would be a good idea
to check with your system administrator to make sure there are no other
wireless LANs in your office building.
Fred Treasure KE5CI
fred@nfo.edu

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

97. [ss] synchronous link

From: "Rui Guerreiro" <rrg98@hotmail.com>
Date: Tue, 13 Jul 1999 07:50:15 PDT
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-29941-1999.07.13-09.58.09--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Hello , does anyone knows a component able to make a sychronous connection
between a 8 bit ADC and a 8 bit DAC, using only one serial connection
between them. The ADC will be sampling at aproximately 4KHz. If it is
possible, I would ask if there is any application note on how to do so, and
if you could send it to me. I'm needing it very urgently.
Thanks for your time

_____
Get Your Private, Free Email at http://www.hotmail.com

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

98. [ss] DSSS radio unit questions

From: "valantine nyenty" <vnchemty@hotmail.com>
Date: Thu, 22 Jul 1999 12:34:35 PDT
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-31112-1999.07.22-14.43.33--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I am a 1st year doctorate student in Cameroon - Africa. I am currently
trying to design a DSSS radio modem based on the AMI waveplex ICs.
I am a novice in the radio front end design. I would like to have some
documents on the radio front end design priciples and practical

considerations, Practical link budget analysis.
I would like to have some references on duplexers operating in the 2.450Ghz
ISM band.

>From: "Steven R. Bible" <n7hpr@amsat.org>
>Reply-To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
>To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
>Subject: [ss] RF Micro Devices (RFMD) in the News
>Date: Sun, 11 Jul 1999 18:07:51 -0400
>
>Doug Gibbs, W8NFT, tipped me on this news item available from
>
>   http://news.rfglobalnet.com/industry-news/19990628-6925.html
>
>Thought those on the list would be interested as well.
>
>- Steve, N7HPR
>
>--
>
>RFMD Delivers Spread-Spectrum Receiver/Transmitter, Wins Phone Order
>Greensboro, NC-based RF Micro Devices (RFMD) has introduced the RF2908 and
>the RF2909, a spread-spectrum receiver and transmitter designed for systems
>operating in the 902 to 928 MHz ISM band.
>
>The RF2908 is a monolithic integrated receiver. The part includes a direct
>conversion receiver, a quadrature demodulator, dual IF amplifiers (with
>gain control and RSSI), on-chip programmable baseband filters, dual data
>comparators, and a serially programmable 86-channel phase-locked loop (PLL)
>frequency synthesizer. Applications for the RF2908 include digital cordless
>telephones, secure communication links, wireless local-area networks
>(WLANs), inventory tracking, wireless security and battery-powered
>applications.
>
>Designed to operate with the RF2908, the RF2909 is a monolithic integrated
>transmitter IC capable of universal direct modulation in a variety of
>modulation formats and compound carriers. The transmitter has two power
>control modes. In the first mode, two inputs can be controlled digitally
>for stepping output power 1, 10, or 70 mW. In the second mode, the output
>level can be adjusted by an analog input from 1 to 80 mW. Applications for
>the RF2909 include direct-sequence spread-spectrum systems, spread-spectrum
>cordless phones, portable battery-powered equipment, and 915 MHz.
>
>The RF2908 is supplied in a 48-lead LQFP and is offered at $5.25 in 10,000
>quantities. The RF2909, on the other hand, is delivered in a 24-lead SSOP
>and is priced at $2.35 in 10,000 quantities.
>
>
>
>
>---
>You are currently subscribed to ss as: vnchemty@hotmail.com
>To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org
>

_____
Get Your Private, Free Email at http://www.hotmail.com

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

99. [ss] HomeCast?

From: "Scott C. Best" <sbest00@svpal.org>
Date: Mon, 26 Jul 1999 16:48:01 -0700 (PDT)
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-31587-1999.07.26-18.56.34--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Anyone happen to know the technical underpinnings of Alation's
HomeCast Open Protocol (HOP), the one behind Diamond Multimedia's
HomeFree networking cards? I'm looking for info regarding hop-rate,
modulation type, receiver sensitivity @ 1e-04 BER, stuff like that.
        Thanks in advance!

cheers,
Scott

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

100. [ss] Re: HomeCast?

From: "Jeremy McMillan" <mcmillan@cboe.com>
Date: Wed, 28 Jul 1999 07:48:06 -0500
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-31842-1999.07.28-07.52.15--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

If it's an *open* protocol, there can be no underpinnings.
Have you tried writing or calling them to get a protocol spec?

----- Original Message -----
From: Scott C. Best <sbest00@svpal.org>
To: TAPR Spread Spectrum Special Interest Group <ss@lists.tapr.org>
Sent: Monday, July 26, 1999 6:48 PM
Subject: [ss] HomeCast?

>
> Anyone happen to know the technical underpinnings of Alation's
> HomeCast Open Protocol (HOP), the one behind Diamond Multimedia's
> HomeFree networking cards? I'm looking for info regarding hop-rate,
> modulation type, receiver sensitivity @ 1e-04 BER, stuff like that.
> Thanks in advance!
>
> cheers,
> Scott
>
>
>
>
>
> ---
> You are currently subscribed to ss as: mcmillan@cboe.com
> To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org
>
>

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

101. [ss] LMX3162 Single Chip Radio Transceiver

From: "Steven R. Bible" <n7hpr@amsat.org>
Date: Wed, 28 Jul 1999 19:32:16 -0400
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-31920-1999.07.28-18.40.08--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Found this in the latest Electronics Products magazine. Information
available at

    http://www.national.com/pf/LM/LMX3162.html

General Description
The LMX3162 Single Chip Radio Transceiver is a monolithic, integrated radio
transceiver optimized for use in ISM 2.45 GHz wireless systems. It is
fabricated using National's ABiC V BiCMOS process (fT = 18 GHz).

The LMX3162 contains phase locked loop (PLL), transmit and receive
functions. The 1.3 GHz PLL is shared between transmit and receive sections.
The transmitter includes a frequency doubler, and a high frequency buffer.
The receiver consists of a 2.5 GHz low noise mixer, an intermediate
frequency (IF) amplifier, a high gain limiting amplifier, a frequency
discriminator, a received signal strength indicator (RSSI), and an analog
DC compensation loop. The PLL, doubler, and buffers can be used to
implement open loop modulation along with an external VCO and loop filter.
The circuit features on-chip voltage regulation to allow supply voltages
ranging from 3.0V to 5.5V. Two additional voltage regulators provide a
stable supply source to external discrete stages in the Tx and Rx chains.

The IF amplifier, high gain limiting amplifier, and discriminator are optimized for 110 MHz operation, with a total IF gain of 85 dB. The single conversion receiver architecture provides a low cost, high performance solution for communications systems. The RSSI output may be used for channel quality monitoring.

The Single Chip Radio Transceiver is available in a 48-pin 7mm X 7mm X 1.4mm PQFP surface mount plastic package.

- Steve, N7HPR
  n7hpr@tapr.org
  n7hpr@amsat.org

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

August 1999

Original source file: ss.9908
Source: http://ftp.tapr.org/tapr_history/SIG_Archives/spread-spectrum-sig/mail_archive/ss.9908

1. [ss] FCC proposed mod to FH bandwidth

From: "Scott C. Best" <sbest00@svpal.org>
Date: Mon, 2 Aug 1999 18:30:02 -0700 (PDT)
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-32699-1999.08.02-20.38.56--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Zoiks. Musta been sleeping when this news broke back in June:

www.fcc.gov/Bureaus/Engineering_Technology/Notices/1999/fcc99149.txt

-Scott

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

2. [ss] Re: FCC proposed mod to FH bandwidth

From: Dewayne Hendricks <dewayne@warpspeed.com>
Date: Mon, 2 Aug 1999 19:02:26 -0700
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-32703-1999.08.02-21.18.53--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

At 18:30 -0700 8/2/99, Scott C. Best wrote:
>Zoiks. Musta been sleeping when this news broke back in June:
>
>www.fcc.gov/Bureaus/Engineering_Technology/Notices/1999/fcc99149.txt

        Not really. I've known about it since it came out. Nothing
much to do with amateur radio and its use of spread spectrum. I do
intend to file comments on it though.

-- Dewayne

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

3. [ss] Re: FCC proposed mod to FH bandwidth

From: "Scott C. Best" <sbest00@svpal.org>
Date: Tue, 3 Aug 1999 10:31:35 -0700 (PDT)
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-32800-1999.08.03-12.40.57--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Dewayne:

        Glad to hear that people on the tech-council of the FCC
hear about these things in good order. ;)
        Though, I'm curious why you feel it has nothing much
to do with spread-spectrum amatuer radio. I mean, TAPR's
working on a FH'r for wireless internet access, and much
of the derision I've read aimed at such solutions centers on
the cost/speed ratio. While I'm hardly an expert, it seems
that opening the 20dB bandwidth to 5MHz instead of 1MHz
will allow for higher data-rate systems using the more
commercially tractable FHSS as opposed to DS.

        Not to mention the impact on current DS systems
trying to coexist with FH ones.
        Anyhow, just curious what the experts think. Thanks...

-Scott

> At 18:30 -0700 8/2/99, Scott C. Best wrote:
> >Zoiks. Musta been sleeping when this news broke back in June:

> >
> >www.fcc.gov/Bureaus/Engineering_Technology/Notices/1999/fcc99149.txt
>
>   Not really. I've known about it since it came out. Nothing
> much to do with amateur radio and its use of spread spectrum. I do
> intend to file comments on it though.
>
> -- Dewayne
>
>
> ---
> You are currently subscribed to ss as: sbest00@svpal.org
> To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org
>
>

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

4. [ss] Re: FCC proposed mod to FH bandwidth

From: Jake Janovetz <janovetz@tempest.ece.uiuc.edu>
Date: Tue, 3 Aug 1999 13:59:13 -0500
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-32814-1999.08.03-14.09.04--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Aren't amateurs given a different set of rules in the band, though?
I know that in the 900 MHz band amateurs are given higher
power allotments, etc. Isn't it true of the 2.4G?

DS are becoming more and more commercially tractable (and
preferable) as time goes on.

   Cheers,
   Jake

On Tue, Aug 03, 1999 at 10:31:35AM -0700, Scott C. Best wrote:
> Dewayne:
>
>   Glad to hear that people on the tech-council of the FCC
> hear about these things in good order. ;)
>   Though, I'm curious why you feel it has nothing much
> to do with spread-spectrum amatuer radio. I mean, TAPR's
> working on a FH'r for wireless internet access, and much
> of the derision I've read aimed at such solutions centers on
> the cost/speed ratio. While I'm hardly an expert, it seems
> that opening the 20dB bandwidth to 5MHz instead of 1MHz
> will allow for higher data-rate systems using the more
> commercially tractable FHSS as opposed to DS.
>
>   Not to mention the impact on current DS systems
> trying to coexist with FH ones.
>   Anyhow, just curious what the experts think. Thanks...
>
> -Scott
>
>
> > At 18:30 -0700 8/2/99, Scott C. Best wrote:
> > >Zoiks. Musta been sleeping when this news broke back in June:
> > >
> > >www.fcc.gov/Bureaus/Engineering_Technology/Notices/1999/fcc99149.txt
> > >
> >   Not really. I've known about it since it came out. Nothing
> > much to do with amateur radio and its use of spread spectrum. I do
> > intend to file comments on it though.
> >
> > -- Dewayne
> > >
> > >
> > ---
> > You are currently subscribed to ss as: sbest00@svpal.org
> > To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org
> > >
> > >
> >
> >

> ---
> You are currently subscribed to ss as: JANOVETZ@UIUC.EDU
> To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

--
   janovetz@uiuc.edu | Once you have flown, you will walk the earth with
 University of Illinois | your eyes turned skyward, for there you have been,
                        | there you long to return.   -- da Vinci
        PP-ASEL | http://www.ews.uiuc.edu/~janovetz/index.html

---
You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

5. [ss] Re: FCC proposed mod to FH bandwidth

From: "Jeremy McMillan" <mcmillan@cboe.com>
Date: Tue, 3 Aug 1999 15:43:55 -0500
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-32826-1999.08.03-15.47.49--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Amateurs, if they have a liscence to operate in 900MHz, are by virtue of a
liscence given a specific level of FCC protection from interference (maybe
very little, but specified in the liscence).

Unliscenced 900MHz operation is given no protection. It is legal to operate
900MHz transmitters, but not above certain emission levels.

----- Original Message -----
From: Jake Janovetz <janovetz@tempest.ece.uiuc.edu>
To: TAPR Spread Spectrum Special Interest Group <ss@lists.tapr.org>
Sent: Tuesday, August 03, 1999 1:59 PM
Subject: [ss] Re: FCC proposed mod to FH bandwidth

> Aren't amateurs given a different set of rules in the band, though?
> I know that in the 900 MHz band amateurs are given higher
> power allotments, etc. Isn't it true of the 2.4G?
>
> DS are becoming more and more commercially tractable (and
> preferable) as time goes on.
>
>   Cheers,
>   Jake
>
>
> On Tue, Aug 03, 1999 at 10:31:35AM -0700, Scott C. Best wrote:
> > Dewayne:
> >
> > Glad to hear that people on the tech-council of the FCC
> > hear about these things in good order. ;)
> > Though, I'm curious why you feel it has nothing much
> > to do with spread-spectrum amatuer radio. I mean, TAPR's
> > working on a FH'r for wireless internet access, and much
> > of the derision I've read aimed at such solutions centers on
> > the cost/speed ratio. While I'm hardly an expert, it seems
> > that opening the 20dB bandwidth to 5MHz instead of 1MHz
> > will allow for higher data-rate systems using the more
> > commercially tractable FHSS as opposed to DS.
> >
> > Not to mention the impact on current DS systems
> > trying to coexist with FH ones.
> > Anyhow, just curious what the experts think. Thanks...
> >
> > -Scott
> >
> >
> > > At 18:30 -0700 8/2/99, Scott C. Best wrote:
> > > >Zoiks. Musta been sleeping when this news broke back in June:
> > > >
> > > >www.fcc.gov/Bureaus/Engineering_Technology/Notices/1999/fcc99149.txt
> > >
> > > Not really. I've known about it since it came out. Nothing
> > > much to do with amateur radio and its use of spread spectrum. I do
> > > intend to file comments on it though.
> > >
> > > -- Dewayne
> > >
> > >

> > > ---
> > > You are currently subscribed to ss as: sbest00@svpal.org
> > > To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org
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> > >
> >
> >
> > ---
> > You are currently subscribed to ss as: JANOVETZ@UIUC.EDU
> > To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org
>
> --
>   janovetz@uiuc.edu | Once you have flown, you will walk the earth
with
> University of Illinois | your eyes turned skyward, for there you have
been,
> | there you long to return.   -- da Vinci
>   PP-ASEL | http://www.ews.uiuc.edu/~janovetz/index.html
>
> ---
> You are currently subscribed to ss as: mcmillan@cboe.com
> To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org
>
>

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

6. [ss] IEEE 802.11 Counters Proposed FCC Rulemaking

From: Dewayne Hendricks <dewayne@warpspeed.com>
Date: Wed, 4 Aug 1999 08:54:33 -0700
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-32932-1999.08.04-11.03.56--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

IEEE 802.11 Counters Proposed FCC Rulemaking

The IEEE 802.11 working group closed out its last session by writing
a letter to the Federal Communications Commission (FCC) in response
to their Notice of Proposed Rule Making (NPRM) on wideband frequency
hopped (WBFH) spread spectrum.

<http://www2.wirelessdesignonline.com/read/nl19990802/4491>

[Note: A pretty good synopsis of what happened at the recent IEEE
802.11 meeting with regards to the FH NPRM that has been recently
discussed on this list. The most interesting conclusion is that the
802.11 Working Group is filing comments against the proposed rule
change. DLH]

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

7. [ss] Spread Spectrum

From: Carlos Pantaleao <panta@gpeb.ufsc.br>
Date: Wed, 04 Aug 1999 13:32:03 -0300
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-32934-1999.08.04-11.40.06--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I am a 1st year doctorate student in UFSC - Brasil and, currently I am
need to learn systems Receiver/Transmitter based in spread spectrum
communications technology in amateur radio service.   I am a novice this area
and I would like to have some documents or references of priciples and
practical considerations this systems.

Best regards,
Carlos Henrique Zanelato Pantaleão
panta@gpeb.ufsc.br

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

8. [ss] Re: Spread Spectrum

From: "valantine nyenty" <vnchemty@hotmail.com>
Date: Wed, 04 Aug 1999 11:56:04 PDT
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-32944-1999.08.04-14.06.38--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Check the following web sites for preliminary imformation:
http://sss-mag.com (tutorials on spread spectrum technology)
http://rfglobalnet.com (Radio frequency design)
http://www.minicircuits.com (A hand full of application notes explaining
parameters of ICs in the radio unit of a transmiter /Receiver
Courage!

>From: Carlos Pantaleao <panta@gpeb.ufsc.br>
>Reply-To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
>To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
>Subject: [ss] Spread Spectrum
>Date: Wed, 04 Aug 1999 13:32:03 -0300
>
>
>
>   I am a 1st year doctorate student in UFSC - Brasil and, currently
>I am
>need to learn systems Receiver/Transmitter based in spread spectrum
>communications technology in amateur radio service.   I am a novice this
>area
>and I would like to have some documents or references of priciples and
>practical considerations this systems.
>
>   Best regards,
>   Carlos Henrique Zanelato
>Pantale□o
>   panta@gpeb.ufsc.br
>
>
>
>---
>You are currently subscribed to ss as: vnchemty@hotmail.com
>To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org
>

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You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

9. [ss] Hatfield on UWB and SDR

From: Dewayne Hendricks <dewayne@warpspeed.com>
Date: Wed, 11 Aug 1999 06:53:42 -0700
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-33740-1999.08.11-09.05.13--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Dale Hatfield, Chief of the FCC's OET gave a talk a few days
ago a the '1999 IEEE Radio and Wireless Conference' on the topic "The
Regulatory Challenges of New Wireless Technologies: Ultrawideband and
Software Defined Radios". This one is worth checking out!!! You can
find it on-line at:

                <http://www.rawcon.org/hatfield.html>

-- Dewayne

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

10. [ss] Fwd: backbone to the FHSS project

From: Greg Jones <wd5ivd@tapr.org>
Date: Wed, 18 Aug 1999 11:49:59 -0500
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-34953-1999.08.18-12.03.51--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Something of interest I received that I thought I would share with the list.

Cheers - Greg

>X-Sender: ka5dwr@tapr.org
>Date: Tue, 17 Aug 1999 11:57:35 -0500
>To: greg@tapr.org
>From: "Marcel, Hamoperator SM0UGT Bos" <sm0ugt@hotmail.com>
>Subject: backbone to the FHSS project
>Mime-Version: 1.0
>Status:
>
>There is now ongoing a new project with its goal to create a 10Mbit
>Microwave kit. Much efforts has Allready been made, and the ones who feels
>that they have a call for this sort of stuff are very much wellcome to join
>us. People of intrests are they who has writeln ethernet protocols, people
>who has wiroked with microwaves - PCB design and the rest who feels that
>they can contribute with something needed inhere.
>
>The project style are driven in the Linux project model.
>
>There is in some locations a badly need of infrastructure in some places
>and at the same time a very bad usement of the 44 andresses, and that is
>something I have in mind to change by this. So fellows who feels that the
>old packetradio standard needs a major upgrade, then please join us.
>
>
>To join, and for more information about the mailinglist
>
>Enter :www.abc.se/~m8114/hamradio
>
>/Marcel Bos
>Sweden
>
>

Greg Jones, WD5IVD Austin, Texas
wd5ivd@tapr.org http://www.tapr.org/~wd5ivd

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

11. [ss] Status on The TAPR SS project?!

From: "Hamoperator SM7UGT Marcel bos" <sm1ugt@hotmail.com>
Date: Wed, 18 Aug 1999 16:14:48 PDT
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-34990-1999.08.18-18.24.22--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I have waited long now - Just wonder WHEN the first release of the
TAPR Spreadspectrum modem will come out..

_____
Get Your Private, Free Email at http://www.hotmail.com

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

12. [ss] Re: Fwd: backbone to the FHSS project /Marcel

From: "Hamoperator SM7UGT Marcel bos" <sm1ugt@hotmail.com>
Date: Wed, 18 Aug 1999 18:31:38 PDT
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-35003-1999.08.18-20.41.16--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Hi Greg - and others.. You can check the drawings at www.qsl.net/ke5fx of
the 10Mbit microwave datalink

Just for the moment we wait on our first load of components
from our dealer in the US. (we got a cind sponsor)

However..

Personaly I LIKE to see the FHSS project in goal. I find
our link together with the FHSS project as a great
harmony thing. Our link takes the head traffic in and from
the towns. The FHSS modem take care of the user-operator
paths. There is however one hatch for eropean users- I Like
to see that modem at the 433 Mhz band instead of the 915 Mhz..
- Sweden and europe uses this band for GSM traffic (Cellular)

/Marcel

>From: Greg Jones <wd5ivd@tapr.org>
>Reply-To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
>To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
>Subject: [ss] Fwd: backbone to the FHSS project
>Date: Wed, 18 Aug 1999 11:49:59 -0500
>
>Something of interest I received that I thought I would share with the
>list.
>
>Cheers - Greg
>
> >X-Sender: ka5dwr@tapr.org
> >Date: Tue, 17 Aug 1999 11:57:35 -0500
> >To: greg@tapr.org
> >From: "Marcel, Hamoperator SM0UGT Bos" <sm0ugt@hotmail.com>
> >Subject: backbone to the FHSS project
> >Mime-Version: 1.0
> >Status:
> >
> >There is now ongoing a new project with its goal to create a 10Mbit
> >Microwave kit. Much efforts has Allready been made, and the ones who
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> >that they have a call for this sort of stuff are very much wellcome to
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> >us. People of intrests are they who has writeln ethernet protocols,
>people
> >who has wiroked with microwaves - PCB design and the rest who feels that
> >they can contribute with something needed inhere.
> >
> >The project style are driven in the Linux project model.
> >
> >There is in some locations a badly need of infrastructure in some places
> >and at the same time a very bad usement of the 44 andresses, and that is
> >something I have in mind to change by this. So fellows who feels that
>the
> >old packetradio standard needs a major upgrade, then please join us.
> >
> >
> >To join, and for more information about the mailinglist
> >
> >Enter :www.abc.se/~m8114/hamradio
> >
> >/Marcel Bos
> >Sweden
> >
> >
>
>-----
>Greg Jones, WD5IVD   Austin, Texas
>wd5ivd@tapr.org   http://www.tapr.org/~wd5ivd
>
>
>
>---
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13. [ss] Re: backbone to the FHSS project /Marcel

From: Robert McGwier <rwmcgwier@home.com>
Date: Wed, 18 Aug 1999 22:25:41 -0400
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-35008-1999.08.18-21.35.21--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

What does running ethernet on a gunn plexer directly modulating
an FM transmitter have to do with direct sequence spread
spectrum? NOTHING.

Bob

At 06:31 PM 8/18/99 -0700, you wrote:
>
>
>Hi Greg - and others.. You can check the drawings at www.qsl.net/ke5fx of
>the 10Mbit microwave datalink
>
>Just for the moment we wait on our first load of components
>from our dealer in the US. (we got a cind sponsor)
>
>However..
>
>Personaly I LIKE to see the FHSS project in goal. I find
>our link together with the FHSS project as a great
>harmony thing. Our link takes the head traffic in and from
>the towns. The FHSS modem take care of the user-operator
>paths. There is however one hatch for eropean users- I Like
>to see that modem at the 433 Mhz band instead of the 915 Mhz..
>- Sweden and europe uses this band for GSM traffic (Cellular)
>
>/Marcel
>
>
>
>>From: Greg Jones <wd5ivd@tapr.org>
>>Reply-To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
>>To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
>>Subject: [ss] Fwd: backbone to the FHSS project
>>Date: Wed, 18 Aug 1999 11:49:59 -0500
>>
>>Something of interest I received that I thought I would share with the
>>list.
>>
>>Cheers - Greg
>>
>> >X-Sender: ka5dwr@tapr.org
>> >Date: Tue, 17 Aug 1999 11:57:35 -0500
>> >To: greg@tapr.org
>> >From: "Marcel, Hamoperator SM0UGT Bos" <sm0ugt@hotmail.com>
>> >Subject: backbone to the FHSS project
>> >Mime-Version: 1.0
>> >Status:
>> >
>> >There is now ongoing a new project with its goal to create a 10Mbit
>> >Microwave kit. Much efforts has Allready been made, and the ones who
>>feels
>> >that they have a call for this sort of stuff are very much wellcome to
>>join
>> >us. People of intrests are they who has writeln ethernet protocols,
>>people
>> >who has wiroked with microwaves - PCB design and the rest who feels that
>> >they can contribute with something needed inhere.
>> >
>> >The project style are driven in the Linux project model.
>> >
>> >There is in some locations a badly need of infrastructure in some places
>> >and at the same time a very bad usement of the 44 andresses, and that is
>> >something I have in mind to change by this. So fellows who feels that
>>the
>> >old packetradio standard needs a major upgrade, then please join us.
>> >
>> >
>> >To join, and for more information about the mailinglist
>> >
>> >Enter :www.abc.se/~m8114/hamradio

>> >
>> >/Marcel Bos
>> >Sweden
>> >
>> >
>>
>>-----
>>Greg Jones, WD5IVD   Austin, Texas
>>wd5ivd@tapr.org   http://www.tapr.org/~wd5ivd
>>
>>
>>
>>---
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>>
>
>
>____
>Get Your Private, Free Email at http://www.hotmail.com
>
>---
>You are currently subscribed to ss as: RWMCGWIER@HOME.COM
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---
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14. [ss] Re: backbone to the FHSS project /Marcel

From: Dirk Koopman <djk@tobit.co.uk>
Date: Thu, 19 Aug 1999 11:46:25 +0100 (BST)
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-35065-1999.08.19-06.01.37--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

On 19-Aug-99 Robert McGwier wrote:
> What does running ethernet on a gunn plexer directly modulating
> an FM transmitter have to do with direct sequence spread
> spectrum? NOTHING.

Not quite... The bandwidth requirements are very similar :-)

Dirk-Jan Koopman, Tobit Computer Co Ltd
At the source of every error which is blamed on the computer you will find
at least two human errors, including the error of blaming it on the computer.

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15. [ss] Re: backbone to the FHSS project /Marcel

From: "M.A.PINFOLD" <xtr980020@xtra.co.nz>
Date: Thu, 19 Aug 1999 22:54:58 +1200
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-35066-1999.08.19-06.04.22--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Robert McGwier wrote:
>
> What does running ethernet on a gunn plexer directly modulating
> an FM transmitter have to do with direct sequence spread
> spectrum? NOTHING.
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> Bob
>
> At 06:31 PM 8/18/99 -0700, you wrote:
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> >Hi Greg - and others.. You can check the drawings at www.qsl.net/ke5fx of
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> >
> >Just for the moment we wait on our first load of components
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> >However..
> >
> >Personaly I LIKE to see the FHSS project in goal. I find
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> >the towns. The FHSS modem take care of the user-operator
> >paths. There is however one hatch for eropean users- I Like
> >to see that modem at the 433 Mhz band instead of the 915 Mhz..
> >- Sweden and europe uses this band for GSM traffic (Cellular)
> >
> >/Marcel
> >
> >
> >
> >>From: Greg Jones <wd5ivd@tapr.org>
> >>Reply-To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
> >>To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
> >>Subject: [ss] Fwd: backbone to the FHSS project
> >>Date: Wed, 18 Aug 1999 11:49:59 -0500
> >>
> >>Something of interest I received that I thought I would share with the
> >>list.
> >>
> >>Cheers - Greg
> >>
> >> >X-Sender: ka5dwr@tapr.org
> >> >Date: Tue, 17 Aug 1999 11:57:35 -0500
> >> >To: greg@tapr.org
> >> >From: "Marcel, Hamoperator SM0UGT Bos" <sm0ugt@hotmail.com>
> >> >Subject: backbone to the FHSS project
> >> >Mime-Version: 1.0
> >> >Status:
> >> >
> >> >There is now ongoing a new project with its goal to create a 10Mbit
> >> >Microwave kit. Much efforts has Allready been made, and the ones who
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> >> >that they have a call for this sort of stuff are very much wellcome to
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> >> >us. People of intrests are they who has writeln ethernet protocols,
> >>people
> >> >who has wiroked with microwaves - PCB design and the rest who feels that
> >> >they can contribute with something needed inhere.
> >> >
> >> >The project style are driven in the Linux project model.
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> >> >There is in some locations a badly need of infrastructure in some places
> >> >and at the same time a very bad usement of the 44 andresses, and that is
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> >> >old packetradio standard needs a major upgrade, then please join us.
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> >> >
> >> >To join, and for more information about the mailinglist
> >> >
> >> >Enter :www.abc.se/~m8114/hamradio
> >> >
> >> >/Marcel Bos
> >> >Sweden
> >> >
> >> >
> >>
> >>-----
> >>Greg Jones, WD5IVD   Austin, Texas
> >>wd5ivd@tapr.org   http://www.tapr.org/~wd5ivd
> >>
> >>
> >>
> >>---
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> >
> >
> >____
> >Get Your Private, Free Email at http://www.hotmail.com
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> >---
> >You are currently subscribed to ss as: RWMCGWIER@HOME.COM
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>
> ---
> You are currently subscribed to ss as: PINFOLD@XTRA.CO.NZ
> To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org
 dont be such a wet blanket we all cant be experts!Im pleased the site
was bought too my attention I can learn from it cheers mike ZL1BTB

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16. [ss] Re: backbone to the FHSS project /Marcel

From: "Hamoperator SM7UGT Marcel bos" <sm1ugt@hotmail.com>
Date: Thu, 19 Aug 1999 07:14:30 PDT
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-35089-1999.08.19-09.24.11--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

It has nothing to do with it - not at all. But it has if you
are intrested to build a lage hispeed infrastructure.

Therefore I said BACKBONE to the FHSS project. What I remeber the
FHSS modems could only handel 128Kbit/sek. The microwave link
can provide the distibution lan Since its much faster-

the FHSS modems can provide conectivity to the endusers -
without the need of working as distribution lan too. This
WILL slow down the system to the old 1k2 days in zerotime
with the userbase they gonna get.

If you don't find this solotion intresting well - I can't help
it. Make another. I just wanted to promote a solotion was
fast, cheap, easy.

>From: Dirk Koopman <djk@tobit.co.uk>
>Reply-To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
>To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
>Subject: [ss] Re: backbone to the FHSS project /Marcel
>Date: Thu, 19 Aug 1999 11:46:25 +0100 (BST)
>
>
>On 19-Aug-99 Robert McGwier wrote:
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>---
>Dirk-Jan Koopman, Tobit Computer Co Ltd
>At the source of every error which is blamed on the computer you will find
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>
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17. [ss] Re: backbone to the FHSS project /Marcel

From: "Vazquez, Miguel" <Miguel.Vazquez@iusacell.com.mx>
Date: Thu, 19 Aug 1999 13:03:06 -0500
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-35125-1999.08.19-14.02.05--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

The gunplexer 10Mb link, in my personal oppinion i'ts an interesting OPTION
as an alternative way to stablishment for a real backbone, high-speed radio
network, and if certainly has nothing to do with SS, it's another RADIO

alternative that may approach us to get our goals materialized, Don't you
think so?

Miguel Dario Vasquez Zarate, IUSACELL Ingenieria Zona Norte
Tel (16) 203102 Fax (16) 203091 Beeper (16) 191596 pin 9950062

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18. [ss] Re: backbone to the FHSS project /Marcel

From: "Hamoperator SM7UGT Marcel bos" <sm1ugt@hotmail.com>
Date: Fri, 20 Aug 1999 03:15:56 PDT
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-35220-1999.08.20-05.25.47--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

That was my point..

>From: "Vazquez, Miguel" <Miguel.Vazquez@iusacell.com.mx>
>Reply-To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
>To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
>Subject: [ss] Re: backbone to the FHSS project /Marcel
>Date: Thu, 19 Aug 1999 13:03:06 -0500
>
>The gunplexer 10Mb link, in my personal oppinion i'ts an interesting OPTION
>as an alternative way to stablishment for a real backbone, high-speed radio
>network, and if certainly has nothing to do with SS, it's another RADIO
>alternative that may approach us to get our goals materialized, Don't you
>think so?
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>Miguel Dario Vasquez Zarate, IUSACELL Ingenieria Zona Norte
>Tel (16) 203102 Fax (16) 203091 Beeper (16) 191596 pin 9950062
>
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19. [ss] FHSS Radio Design Update

From: Greg Jones <wd5ivd@tapr.org>
Date: Sat, 28 Aug 1999 11:23:35 -0500
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-36825-1999.08.28-11.44.12--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

An update to the radio project status has been put up on the web page.
There will be a full project report and update at the DCC
(http://www.tapr.org/dcc). We hope you can attend this year's DCC, it is
shaping up well.

We will also be making a significant announcement at the DCC concerning
future development of the radio.

The web page can be found at http://www.tapr.org/tapr/html/ssf.html

----

TAPR 900MHz FHSS Radio Design Update
August, 1999

To update the status of the TAPR FHSS radio project: we brought on two
additional members to the design team a few months ago, John Schroeder,
K5ZMJ, and David Cummings, WA5TET. John and David have been working on
revising the RF board. We found that due to a miscommunication with our
board shop, that the dielectric thickness between the board core and the
outer signal layers was only 7.5 mils, instead of the expected 25 mils.
This lowered the effective impedance of the 50-ohm microstrip lines down to

21 ohms, which has caused problems with the RF signal levels.
Additionally, several of the RF components that we used on the original
layout of the RF board have since been discontinued. So John and David are
redesigning the RF board to eliminate those parts, and substitute them for
more general-purpose parts that we hope will have a longer production
lifetime.

A more difficult part cancellation was that of the Motorola MC145750 QPSK
modulator component. This part provided a number of functions in a single,
compact IC. Unfortunately only having available limited documentation we
were not able to get the phase-locked loop on it to operate. This, coupled
along with it's production cancellation has forced us into a difficult
redesign. Several years ago this type of redesign would have been
virtually impossible for us to cope with, but thanks to improving FPGA
technology, we are going to implement the baseband FIR filters for the
modulator in a Xilinx FPGA (Field programmable Gate Array) component. One
of the great difficulties with high-speed digital data radios is
implementing the modulation filters. We need a large number of taps with a
significant amount of precision of the coefficient values. The processing
requirements (high data rate, lots of taps) places the computational load
beyond what almost any general-purpose software-programmable DSP chips is
able to accomplish. Fortunately, Xilinx has released a 'core' generator
for their FPGA parts which implement in bit-serial arithmetic symmetric and
non-symmetric FIR (Finite Impulse Response) digital filters. Our
computation shows that they will be just fast enough to implement our modem
filters. These filters will provide square-root of raised-cosine shaping
to the transmit baseband I- and Q- channels. This logic will be added to
new logic we have to generate for differentially-coding and word-formatting
the QPSK symbols. Previously, we had also implemented the symbol-timing
recovery logic in a small FPGA for the Harris QPSK demodulator, so we can
put all of these different logic functions into a single Xilinx device.

Current estimates are that it will take about 40,000 gates of logic to fit
all of this into a single FPGA. We've identified the proper parts, and the
costs are within the design tolerance. Fortunately, the part comes in a
100-pin quad leaded flat pack that is amazingly small, so Bob Stricklin,
N5BRG is confident he can fit it and a new dual D/A converter all onto the
existing digital board. The D/A converter is from Analog Devices - it
provides 2x interpolation of the signals which reduces the demands on the
reconstruction filters after the analog output port. All the parts are
surface-mount, and the FPGA has small lead spacing (about 20 mils) like the
Motorola processor part (get out your microscope to probe these parts!).

All of these changes will result in the interface between the digital and
analog radio boards being changed to baseband I- and Q- in both the
transmit and receive directions. One benefit of doing this is that we will
be able to test many of the receiver functions of the digital board by
looping back the transmit signals to the receive signals. It also removes
all of the digital baseband processing form the RF board - so hopefully the
RF board will be easier to port to new frequencies in the future.

We now have design kits for the Xilinx components, and have begun coding
and testing the logic. The Xilinx parts contain internal RAM to implement
the logic configuration of the gates. Normally, a serial FLASH prom is
used on the PC board to load the Xilinx part with it's logic functionality.
We are instead going to implement a loader in the 68360 microprocessor.
This will allow us to put all of the logic for the part into the software
configuration of the radio, and alter the actual logic in the part with
updates to the software, only. The code will be in the microprocessor's
FLASH memory, and the processor will download the FPGA during the boot-up
time.

Unfortunately, all of this redesign and component substitution has of
course delayed the project. Our hope is that by beefing up the design
staff we can put the RF and baseband design efforts in parallel, and keep
things moving. One lesson learned is that ham radio projects now have to
be finished within the production lifetime of the components used on the
project - and those times are shrinking FAST!

Tom McDermott, N5EG

Greg Jones, WD5IVD Austin, Texas
wd5ivd@tapr.org http://www.tapr.org/~wd5ivd

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20. [ss] FHSS design page

From: Robert McGwier <rwmcgwier@home.com>
Date: Sat, 28 Aug 1999 13:50:49 -0400
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-36839-1999.08.28-13.37.54--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Greg, et. al.:

Sorry to be coming in the door late and chiming in with my two cents but ....

So long as you are willing to go to the trouble of using FPGA, you can
do the FIR work with O(N ln N) operations rather than O(N^2) operations
and get really long filters. This is done by doing linear convolutions
using FFT's and doing the overlap save or overlap add method to turn
the circular convolution into linear convolution with a little overhead
(overhead in length of filter and memory requirements). You
can get LONG "brick wall" FIR filters doing it this way. Has this
been considered? Given that you are willing to put in the huge
delay line anyway, this can't be that much more expensive.

Thanks for the review. It is very interesting.

Bob

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To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

21. [ss] Re: FHSS design page

From: Jake Janovetz <janovetz@tempest.ece.uiuc.edu>
Date: Sun, 29 Aug 1999 12:22:56 -0500
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-37035-1999.08.29-12.35.02--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Bob,

  If I read the update correctly, they are using FIR filters in
the modulator which doesn't need high-order filtering. In fact,
the filters are used with incoming impulses to generated the
modulated signal -- not really filtering anything in the way we
usually think of it. My point is that FIR filters are preferred
to FFTs in modulation tasks.
  Also, I don't know which FPGA they chose, but a 1024-point FFT
(big for the task) requires several hundred CLBs. An alternative
to FIR modulation is using wavetables. Personally, I'd say
waveform synthesis is a better solution to the FHSS problem, but
I don't know exactly what their constraints are.

   Cheers,
   Jake

On Sat, Aug 28, 1999 at 01:50:49PM -0400, Robert McGwier wrote:
> Greg, et. al.:
>
> Sorry to be coming in the door late and chiming in with my two cents but ....
>
> So long as you are willing to go to the trouble of using FPGA, you can
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> delay line anyway, this can't be that much more expensive.
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> Thanks for the review. It is very interesting.
>
> Bob
>
>
> ---
> You are currently subscribed to ss as: JANOVETZ@UIUC.EDU
> To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

```
--
   janovetz@uiuc.edu    | Once you have flown, you will walk the earth with
 University of Illinois | your eyes turned skyward, for there you have been,
                        | there you long to return.     -- da Vinci
        PP-ASEL         | http://www.ews.uiuc.edu/~janovetz/index.html

---
You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org
```

22. [ss] Re: FHSS design page

From: "Tom Mcdermott" <Tom.Mcdermott@usa.alcatel.com>
Date: Mon, 30 Aug 1999 07:32:28 -0500
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-37192-1999.08.30-07.42.52--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

The baseband data filters are FIR filters inplemented in an FPGA
(along with all the other needed logic). The filters have been designed,
and a 48-tap symmetric filter is used in each channel. Coefficients have
been designed, and trimmed to 10-bits width with only a very slight
effect on the filter performance.

This filter has been automatically synthesized by the FPGA design package
in bit-serial logic, and instantiated as a schematic macro. The synthesis takes
about 1 minute on a 266 Mhz. Pentium.

    Additional logic to differentially-code the data, and to covert it
to 2's complement signed form are done (and is really very simple).

    More work is involved in designing the timing chains and finishing up
the logic for 2x interpolation. The transmit DAC also does 2x interpolation,
and the net result of 4x interpolation is that the analog reconstruction filters
are significantly simplified.

Jake Janovetz wrote:

> Bob,
>
>   If I read the update correctly, they are using FIR filters in
> the modulator which doesn't need high-order filtering. In fact,
> the filters are used with incoming impulses to generated the
> modulated signal -- not really filtering anything in the way we
> usually think of it. My point is that FIR filters are preferred
> to FFTs in modulation tasks.
>   Also, I don't know which FPGA they chose, but a 1024-point FFT
> (big for the task) requires several hundred CLBs. An alternative
> to FIR modulation is using wavetables. Personally, I'd say
> waveform synthesis is a better solution to the FHSS problem, but
> I don't know exactly what their constraints are.
>
>   Cheers,
>   Jake
>
> On Sat, Aug 28, 1999 at 01:50:49PM -0400, Robert McGwier wrote:
> > Greg, et. al.:
> >
> > Sorry to be coming in the door late and chiming in with my two cents but ....
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> > So long as you are willing to go to the trouble of using FPGA, you can
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> > Bob
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> > ---
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> > To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

>
> --
>   janovetz@uiuc.edu | Once you have flown, you will walk the earth with
> University of Illinois | your eyes turned skyward, for there you have been,
> | there you long to return.   -- da Vinci
>   PP-ASEL | http://www.ews.uiuc.edu/~janovetz/index.html
>
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--

Tom McDermott
Tom.Mcdermott@usa.alcatel.com

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23. [ss] Re: FHSS design page

From: Robert McGwier <rwmcgwier@home.com>
Date: Mon, 30 Aug 1999 09:07:29 -0400
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-37197-1999.08.30-08.27.36--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

>From the page:

loop on it to operate. This, coupled along with it's production
cancellation has forced us into a difficult redesign. Several years ago this
type of redesign would have been virtually impossible for us to cope with,
but thanks to improving FPGA technology, we are going to
implement the baseband FIR filters for the modulator in a Xilinx FPGA
(Field programmable Gate Array) component. One of the great
difficulties with high-speed digital data radios is implementing the
modulation filters. We need a large number of taps with a significant
amount of precision of the coefficient values. The processing requirements
(high data rate, lots of taps) places the computational load
beyond what almost any general-purpose software-programmable DSP chips is
able to accomplish. Fortunately, Xilinx has released a
'core' generator for their FPGA parts which implement in bit-serial
arithmetic symmetric and non-symmetric FIR (Finite Impulse
Response) digital filters. Our computation shows that they will be just
fast enough to implement our modem filters. These filters will
provide square-root of raised-cosine shaping to the transmit baseband I-
and Q- channels. This logic will be added to new logic we have
to generate for differentially-coding and word-formatting the QPSK symbols.
Previously, we had also implemented the symbol-timing

These square root raised cosine filters have to be many bauds long in order
to work properly
so that when you convolve one in the receiver (a requirement!) with one
applied in the
transmitter (a requirement) this is going to take a ton of ticks.

At 12:22 PM 08/29/1999 -0500, you wrote:
>Bob,
>
> If I read the update correctly, they are using FIR filters in
>the modulator which doesn't need high-order filtering. In fact,
>the filters are used with incoming impulses to generated the
>modulated signal -- not really filtering anything in the way we
>usually think of it. My point is that FIR filters are preferred
>to FFTs in modulation tasks.
> Also, I don't know which FPGA they chose, but a 1024-point FFT
>(big for the task) requires several hundred CLBs. An alternative
>to FIR modulation is using wavetables. Personally, I'd say

>waveform synthesis is a better solution to the FHSS problem, but
>I don't know exactly what their constraints are.
>
>   Cheers,
>   Jake
>
>
>On Sat, Aug 28, 1999 at 01:50:49PM -0400, Robert McGwier wrote:
>> Greg, et. al.:
>>
>> Sorry to be coming in the door late and chiming in with my two cents but
....
>>
>> So long as you are willing to go to the trouble of using FPGA, you can
>> do the FIR work with O(N ln N) operations rather than O(N^2) operations
>> and get really long filters. This is done by doing linear convolutions
>> using FFT's and doing the overlap save or overlap add method to turn
>> the circular convolution into linear convolution with a little overhead
>> (overhead in length of filter and memory requirements). You
>> can get LONG "brick wall" FIR filters doing it this way. Has this
>> been considered? Given that you are willing to put in the huge
>> delay line anyway, this can't be that much more expensive.
>>
>> Thanks for the review. It is very interesting.
>>
>> Bob
>>
>>
>> ---
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>> To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org
>
>--
>   janovetz@uiuc.edu | Once you have flown, you will walk the earth with
> University of Illinois | your eyes turned skyward, for there you have been,
> | there you long to return.   -- da Vinci
>   PP-ASEL | http://www.ews.uiuc.edu/~janovetz/index.html
>
>---
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>To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

---
You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

24. [ss] Re: FHSS design page

From: Jake Janovetz <janovetz@tempest.ece.uiuc.edu>
Date: Mon, 30 Aug 1999 09:04:25 -0500
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-37202-1999.08.30-09.16.27--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Tom, et al.,

   It's probably too late to change this aspect of the design and
I'm not recommending you do. I'm merely pointing out another
alternative:

   Another way to construct repetitious digital transmission waveforms
is using a wavetable. The FPGA can sequence addresses to the
wavetable (SRAM). The output of the SRAM is sent directly into a
DAC. The advantage of this method is flexibility and speed.
Speed is clearly not a concern since the FPGA can handle the
desired filter. Flexibility may be an issue for hams that want
to play around with this thingy.

   Since the transmit pulse lasts for several bit periods, standard
wavetable techniques aren't enough. They need to be supplemented a
bit. Basically, you synthesize (a priori) all possible combinations
of bit periods. (assuming 48-taps over 8 sample, that makes
6 symbol periods and 2^6 = 64 possible combinations. Therefore,
the wavetable must be 64*8*2=1024 words big. Not a problem.)
The FPGA needs to remember past symbols and incorporate those
into the wavetable addressing.

   If you want to know more about what this can do, go to:

http://tempest.ece.uiuc.edu/cgi-bin/cvsweb.cgi/
   then click on ``doc'' then ``thesis'' then download ``thesis.ps''

   The above page is the CVS repository for my thesis. It
incorporates this sort of flexible wavetable synthesis method.
Basically, you get more speed and more flexibility at the cost
of more power consumption (assuming the SRAM consumes more than
the FPGA pieces used to assemble the FIR).

   All-in-all, I'm glad to hear you've moved to an FPGA design.
They're pretty cool.

    Cheers,
    Jake

On Mon, Aug 30, 1999 at 07:32:28AM -0500, Tom Mcdermott wrote:
>   The baseband data filters are FIR filters inplemented in an FPGA
> (along with all the other needed logic). The filters have been designed,
> and a 48-tap symmetric filter is used in each channel. Coefficients have
> been designed, and trimmed to 10-bits width with only a very slight
> effect on the filter performance.
>
> This filter has been automatically synthesized by the FPGA design package
> in bit-serial logic, and instantiated as a schematic macro. The synthesis takes
> about 1 minute on a 266 Mhz. Pentium.
>
>   Additional logic to differentially-code the data, and to covert it
> to 2's complement signed form are done (and is really very simple).
>
>   More work is involved in designing the timing chains and finishing up
> the logic for 2x interpolation. The transmit DAC also does 2x interpolation,
> and the net result of 4x interpolation is that the analog reconstruction filters
> are significantly simplified.
>
>
>
> Jake Janovetz wrote:
>
> > Bob,
> >
> >   If I read the update correctly, they are using FIR filters in
> > the modulator which doesn't need high-order filtering. In fact,
> > the filters are used with incoming impulses to generated the
> > modulated signal -- not really filtering anything in the way we
> > usually think of it. My point is that FIR filters are preferred
> > to FFTs in modulation tasks.
> >   Also, I don't know which FPGA they chose, but a 1024-point FFT
> > (big for the task) requires several hundred CLBs. An alternative
> > to FIR modulation is using wavetables. Personally, I'd say
> > waveform synthesis is a better solution to the FHSS problem, but
> > I don't know exactly what their constraints are.
> >
> >   Cheers,
> >   Jake
> >
> > On Sat, Aug 28, 1999 at 01:50:49PM -0400, Robert McGwier wrote:
> > > Greg, et. al.:
> > >
> > > Sorry to be coming in the door late and chiming in with my two cents but ....
> > >
> > > So long as you are willing to go to the trouble of using FPGA, you can
> > > do the FIR work with O(N ln N) operations rather than O(N^2) operations
> > > and get really long filters. This is done by doing linear convolutions
> > > using FFT's and doing the overlap save or overlap add method to turn
> > > the circular convolution into linear convolution with a little overhead
> > > (overhead in length of filter and memory requirements). You
> > > can get LONG "brick wall" FIR filters doing it this way. Has this
> > > been considered? Given that you are willing to put in the huge
> > > delay line anyway, this can't be that much more expensive.
> > >
> > > Thanks for the review. It is very interesting.
> > >
> > > Bob
> > >
> > >
> > > ---
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> > --
> >   janovetz@uiuc.edu | Once you have flown, you will walk the earth with
> > University of Illinois | your eyes turned skyward, for there you have been,
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> --
>
> Tom McDermott
> Tom.Mcdermott@usa.alcatel.com
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---
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To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

25. [ss] Re: FHSS design page

From: "Tom Mcdermott" <Tom.Mcdermott@usa.alcatel.com>
Date: Mon, 30 Aug 1999 09:18:50 -0500
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-37206-1999.08.30-09.29.43--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Jake:

        Thanks for the nice coments. The wavetable sounds like
an interesting approach. Although our approach of using an FIR
filter may not be the minimum possible logic, it has the advantage
that the schematic of the filter (the EDIF netlist actually) is
directly synthesized from the coefficients in about 1 minute. It
would probably take me a lot longer to manually capture
a schematic and debug it either using a wavetable solution,
or a FFT/convolution solution.

        Guess that's what happens with design automation tools - they
may make some solutions more attractive than others.

Jake Janovetz wrote:

> Tom, et al.,
>
>   It's probably too late to change this aspect of the design and
> I'm not recommending you do. I'm merely pointing out another
> alternative:
>
>   Another way to construct repetitious digital transmission waveforms
> is using a wavetable. The FPGA can sequence addresses to the
> wavetable (SRAM). The output of the SRAM is sent directly into a
> DAC. The advantage of this method is flexibility and speed.
> Speed is clearly not a concern since the FPGA can handle the
> desired filter. Flexibility may be an issue for hams that want
> to play around with this thingy.
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>   Since the transmit pulse lasts for several bit periods, standard
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> of bit periods. (assuming 48-taps over 8 sample, that makes
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> The FPGA needs to remember past symbols and incorporate those
> into the wavetable addressing.

>
>   If you want to know more about what this can do, go to:
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> http://tempest.ece.uiuc.edu/cgi-bin/cvsweb.cgi/
>   then click on ``doc'' then ``thesis'' then download ``thesis.ps''
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>   The above page is the CVS repository for my thesis. It
> incorporates this sort of flexible wavetable synthesis method.
> Basically, you get more speed and more flexibility at the cost
> of more power consumption (assuming the SRAM consumes more than
> the FPGA pieces used to assemble the FIR).
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>   All-in-all, I'm glad to hear you've moved to an FPGA design.
> They're pretty cool.
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>
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> >
> > This filter has been automatically synthesized by the FPGA design package
> > in bit-serial logic, and instantiated as a schematic macro. The synthesis takes
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> >   Additional logic to differentially-code the data, and to covert it
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> >
> >   More work is involved in designing the timing chains and finishing up
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> > and the net result of 4x interpolation is that the analog reconstruction filters
> > are significantly simplified.
> >
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> >
> > Jake Janovetz wrote:
> >
> > > Bob,
> > >
> > >   If I read the update correctly, they are using FIR filters in
> > > the modulator which doesn't need high-order filtering. In fact,
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> > >   Also, I don't know which FPGA they chose, but a 1024-point FFT
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> > > I don't know exactly what their constraints are.
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> > > > Greg, et. al.:
> > > >
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> > > > delay line anyway, this can't be that much more expensive.
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> > > > Thanks for the review. It is very interesting.
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> > > > Bob
> > > >
> > > >
> > > > ---

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> > > > --
> > > >   janovetz@uiuc.edu | Once you have flown, you will walk the earth with
> > > > University of Illinois | your eyes turned skyward, for there you have been,
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> > > --
> > >
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> > > Tom.Mcdermott@usa.alcatel.com
> > >
> > >
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--

Tom McDermott
Tom.Mcdermott@usa.alcatel.com

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26. [ss] Re: FHSS design page

From: Robert McGwier <rwmcgwier@home.com>
Date: Tue, 31 Aug 1999 06:48:27 -0400
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-37382-1999.08.31-06.03.51--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Tom and Jake:

You both might recall that this is exactly the approach
taken by G3RUH in his 9600 bps FSK modem.
The impulse response is taken into account and then
a state machine derives the actual sample to be
emitted. The FPGA would of course be much
more versatile.

Bob

At 09:18 AM 08/30/1999 -0500, you wrote:
>Jake:
>
>   Thanks for the nice coments. The wavetable sounds like
>an interesting approach. Although our approach of using an FIR
>filter may not be the minimum possible logic, it has the advantage
>that the schematic of the filter (the EDIF netlist actually) is
>directly synthesized from the coefficients in about 1 minute. It
>would probably take me a lot longer to manually capture
>a schematic and debug it either using a wavetable solution,
>or a FFT/convolution solution.
>
>   Guess that's what happens with design automation tools - they
>may make some solutions more attractive than others.
>

>
>Jake Janovetz wrote:
>
>> Tom, et al.,
>>
>>   It's probably too late to change this aspect of the design and
>> I'm not recommending you do. I'm merely pointing out another
>> alternative:
>>

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September 1999

Original source file: ss.9909
Source: http://ftp.tapr.org/tapr_history/SIG_Archives/spread-spectrum-sig/mail_archive/ss.9909

1. [ss] Spread Spectrum R&O released WT 97-12

From: Dewayne Hendricks <dewayne@warpspeed.com>
Date: Fri, 3 Sep 1999 16:54:40 -0700
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-37936-1999.09.03-19.05.24--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

The FCC today released the long awaited Report & Order on
Amateur Radio Spread Spectrum. I have not seen the entire text as
yet, but I thought that I would post a message that outlined what I
do know about what the Commission did:

o   The spreading code limitations have been removed.

o   SS is NOT allowed in VHF spectrum.

o   Automatic power control is mandatory.

o   SS remains secondary to all other modes.

        As soon as TAPR gets a chance look over the entire text of
the R&O, we will post a more detailed analysis of our position on
what the Commission has done.

Dewayne Hendricks WA8DZP
Chair
TAPR Regulatory Affairs Committee

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To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

2. [ss] Re: Spread Spectrum R&O released WT 97-12

From: Robert McGwier <rwmcgwier@home.com>
Date: Sat, 04 Sep 1999 01:40:56 -0400
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-37978-1999.09.04-00.52.58--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

FINALLY, amateur radio spread spectrum becomes interesting
but I wonder what the reasoning was concerning VHF?

The automatic power control being mandatory is really
interesting.

Bob

At 04:54 PM 09/03/1999 -0700, you wrote:
>
>   The FCC today released the long awaited Report & Order on
>Amateur Radio Spread Spectrum. I have not seen the entire text as
>yet, but I thought that I would post a message that outlined what I
>do know about what the Commission did:
>
>o   The spreading code limitations have been removed.
>
>o   SS is NOT allowed in VHF spectrum.
>
>o   Automatic power control is mandatory.
>
>o   SS remains secondary to all other modes.
>
>
>   As soon as TAPR gets a chance look over the entire text of
>the R&O, we will post a more detailed analysis of our position on
>what the Commission has done.
>
>Dewayne Hendricks WA8DZP
>Chair

>TAPR Regulatory Affairs Committee
>
>---
>You are currently subscribed to ss as: RWMCGWIER@HOME.COM
>To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

---
You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

3. [ss] Re: Spread Spectrum R&O released WT 97-12

From: Gerry Creager <gerry@cs.tamu.edu>
Date: Sat, 04 Sep 1999 07:29:22 -0500
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-37989-1999.09.04-07.39.51--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Robert McGwier wrote:
>
> FINALLY, amateur radio spread spectrum becomes interesting
> but I wonder what the reasoning was concerning VHF?

There has been a lot of narrow-band concern about repeater interference
from DSSS (primarily) and FHSS (which the repeater folk consider black
magic). Comments made it to the Commission regarding those concerns.
In a VHF-restriction-only, I suspect they threw a concession to the
narrow-band repeater folks.

> The automatic power control being mandatory is really
> interesting.

Indeed!

73, gerry n5jxs

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

4. [ss] RE: ss digest: September 03, 1999

From: "Lanier, Robert" <rlanier@harris.com>
Date: Sat, 4 Sep 1999 10:45:55 -0400
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-37997-1999.09.04-09.56.45--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

why would SS not be allowed on the VHF bands? Isn't there less activity here
than on say the HF bands? And is this applicable to microwaves as well?

-----Original Message-----
From: TAPR Spread Spectrum Special Interest Group digest
[mailto:ss@lists.tapr.org]
Sent: Saturday, September 04, 1999 1:01 AM
To: ss digest recipients
Subject: ss digest: September 03, 1999

TAPR Spread Spectrum Special Interest Group Digest for Friday, September 03,
1999.

1. Spread Spectrum R&O released WT 97-12

Subject: Spread Spectrum R&O released WT 97-12
From: Dewayne Hendricks <dewayne@warpspeed.com>
Date: Fri, 3 Sep 1999 16:54:40 -0700
X-Message-Number: 1

        The FCC today released the long awaited Report & Order on
Amateur Radio Spread Spectrum. I have not seen the entire text as
yet, but I thought that I would post a message that outlined what I
do know about what the Commission did:

o   The spreading code limitations have been removed.

o   SS is NOT allowed in VHF spectrum.

o Automatic power control is mandatory.

o SS remains secondary to all other modes.

As soon as TAPR gets a chance look over the entire text of the R&O, we will post a more detailed analysis of our position on what the Commission has done.

Dewayne Hendricks WA8DZP
Chair
TAPR Regulatory Affairs Committee

END OF DIGEST

You are currently subscribed to ss as: rlanier@harris.com
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---
You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

5. [ss] RE: ss digest: September 03, 1999

From: Dewayne Hendricks <dewayne@warpspeed.com>
Date: Sat, 4 Sep 1999 09:37:03 -0700
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-38005-1999.09.04-11.48.49--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

At 09:27 -0700 9/4/99, Lanier, Robert wrote:
>why would SS not be allowed on the VHF bands? Isn't there less activity here
>than on say the HF bands? And is this applicable to microwaves as well?

I can't answer you question until I can read the text of the R&O and see what rationale the Commission used in making their decision.

-- Dewayne WA8DZP

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

6. [ss] Re: Spread Spectrum R&O released WT 97-12

From: Jeff King <jeff@aerodata.net>
Date: Sat, 04 Sep 1999 13:03:16 -0400
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-38015-1999.09.04-12.13.23--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Gerry Creager wrote:

> Robert McGwier wrote:
>
> > The automatic power control being mandatory is really
> > interesting.
>
> Indeed!

I take it that automatic power control would only apply to SS and not other modes, such as DX'ers running kilowatts in pileups? Obviously, many advantages to running power control I.E. the Qualcomm CDMA model, but IMHO if there going to legislate power control, it should be applied to the narrow band interests as well. Then again, maybe this is a first step. Anyone know?

-Jeff

You are currently subscribed to ss as: lyris.ss@tapr.org

To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

7. [ss] Re: Spread Spectrum R&O released WT 97-12

From: Greg Jones <wd5ivd@tapr.org>
Date: Sat, 4 Sep 1999 12:44:44 -0500
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-38020-1999.09.04-12.56.12--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

It isn't.

APC makes the Part 15 coalition (which doesn't exist anymore now) happy and
it is what the ARRL wants as to limit the impact on new technologies in
spectrum with the existing paying membership.

A sad state of affairs.

Oh well, time to crank out some technology in the next several months and
then start this process again :-)

We will be filing a petition for reconsideration. Just part of the game,
but I wouldn't expect we will see anything changed.

Does anyone know if an amateur petition for reconsideration has ever been
moved on ?

Cheers - Greg

>Gerry Creager wrote:
>
>> Robert McGwier wrote:
>>
>> > The automatic power control being mandatory is really
>> > interesting.
>>
>> Indeed!
>
>I take it that automatic power control would only apply to SS and
>not other modes, such as DX'ers running kilowatts in pileups?
>Obviously, many advantages to running power control I.E. the
>Qualcomm CDMA model, but IMHO if there going to legislate
>power control, it should be applied to the narrow band interests
>as well. Then again, maybe this is a first step. Anyone know?
>
>-Jeff
>
>
>
>---
>You are currently subscribed to ss as: WD5IVD@TAPR.ORG
>To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

-----
Greg Jones, WD5IVD   Austin, Texas
wd5ivd@tapr.org   http://www.tapr.org/~wd5ivd

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

8. [ss] Re: Spread Spectrum R&O released WT 97-12

From: Jake Janovetz <janovetz@tempest.ece.uiuc.edu>
Date: Sat, 4 Sep 1999 12:44:03 -0500
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-38021-1999.09.04-12.56.27--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Jeff,

   I don't quite understand why power control would be needed
for narrow band folks. Power control is used in DSSS CDMA
systems to minimize the near-far problem with SS radios. The
reason this is crucial is that all the radios are using the same
band and are subject to each other as interferers. In narrow
band systems, only one station is allowed to transmit. If two
start transmitting at the same time, they interfere -- plain and
simple. CDMA allows multiple stations to transmit concurrently

without interfering through the use of (pseudo-)orthogonal
spreading codes, given that power control is efficient.

    Cheers,
    Jake

On Sat, Sep 04, 1999 at 01:03:16PM -0400, Jeff King wrote:
>
>
> Gerry Creager wrote:
>
> > Robert McGwier wrote:
> >
> > > The automatic power control being mandatory is really
> > > interesting.
> >
> > Indeed!
>
> I take it that automatic power control would only apply to SS and
> not other modes, such as DX'ers running kilowatts in pileups?
> Obviously, many advantages to running power control I.E. the
> Qualcomm CDMA model, but IMHO if there going to legislate
> power control, it should be applied to the narrow band interests
> as well. Then again, maybe this is a first step. Anyone know?
>
> -Jeff
>
>
>
> ---
> You are currently subscribed to ss as: JANOVETZ@UIUC.EDU
> To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

--
   janovetz@uiuc.edu | Once you have flown, you will walk the earth with
 University of Illinois | your eyes turned skyward, for there you have been,
                        | there you long to return.   -- da Vinci
        PP-ASEL | http://www.ews.uiuc.edu/~janovetz/index.html

---
You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

9. [ss] Re: Spread Spectrum R&O released WT 97-12

From: Jeff King <jeff@aerodata.net>
Date: Sat, 04 Sep 1999 16:53:42 -0400
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-38049-1999.09.04-16.04.02--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Hi Jake:

The key here is to think how things really are deployed (in amateur
radio) as opposed to how they should be deployed in theory (which
more often then not, is ignored by most amateurs).

Jake Janovetz wrote:

>   I don't quite understand why power control would be needed
> for narrow band folks.

Because they commonly run far more power then is needed to maintain
communications. You have two settings on many 2/440 meter rigs, low
(15 watts) and high (50 watts). Often 50 _milliwatts_ is just fine. Try to
convince a narrowband operator that they only need to run 50 milliwatts
most of the time. And that 50 watt operator could be in the center of your
DSSS signal. That 50 watts means you need 30db more process gain
in your DSSS system to get rid of the narrowband interference (as opposed
to if the narrowband op was running 50 milliwatts)

> Power control is used in DSSS CDMA
> systems to minimize the near-far problem with SS radios.

Yes, that is like the Qualcomm CDMA system I mentioned. I know the
advantages of power control for a homogenous DSSS network. I'm
told much of the time these radios are operating at less then 50 milliwatts.

> The
> reason this is crucial is that all the radios are using the same
> band and are subject to each other as interferers. In narrow
> band systems, only one station is allowed to transmit. If two
> start transmitting at the same time, they interfere -- plain and
> simple. CDMA allows multiple stations to transmit concurrently
> _without_ interfering through the use of (pseudo-)orthogonal
> spreading codes, given that power control is efficient.

Yes, in an ideal homogenous radio network. Amateur radio is not.
You will have narrowband emitters in the same band as DSSS.
Hence, it will be advantageous for both systems to use power control
as its been my experience that DSSS is quite sensitive to narrowband
emitters, especially the DSSS part 15 stuff with its low process gain.

Anyways, didn't mean to go off on a tangent. I was just irritated that
spread spectrum is still being treated as a second class citizen by the
great majority of amateur radio. Call me a radical but I think that
the narrowband stuff should be secondary to SS.

Best regards,

Jeff wb8wka

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

10. [ss] Re: Spread Spectrum R&O released WT 97-12

From: Barry McLarnon VE3JF <bm@lynx.ve3jf.ampr.org>
Date: Mon, 6 Sep 1999 11:17:21 -0400 (EDT)
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-38265-1999.09.06-10.28.21--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Jake Janovetz <janovetz@tempest.ece.uiuc.edu> wrote:
> Jeff,
>
>   I don't quite understand why power control would be needed
> for narrow band folks. Power control is used in DSSS CDMA
> systems to minimize the near-far problem with SS radios. The
> reason this is crucial is that all the radios are using the same
> band and are subject to each other as interferers. In narrow
> band systems, only one station is allowed to transmit. If two
> start transmitting at the same time, they interfere -- plain and
> simple. CDMA allows multiple stations to transmit concurrently
> _without_ interfering through the use of (pseudo-)orthogonal
> spreading codes, given that power control is efficient.

As Jeff points out, power control on narrowband signals would make
the spectrum more usable for SS. Moreover, there is even a near-far
problem of sorts when you consider only narrowband signals. This is
because narrowband transmitters and receivers are not perfect - the
transmitters have sidebands outside their nominal bandwidth, and the
receivers have finite rejection of out-of-band signals. Thus a
nearby narrowband transmitter can interfere with your reception on
a different (non-overlapping) frequency. In other words, narrowband
signals on different channels within a band are only pseudo-orthogonal
too - power control would allow them to more closely approach the ideal
of orthogonality.

Barry

--
  Barry McLarnon VE3JF | bm@hydra.carleton.ca
  Ottawa Amateur Radio Club | bm@lynx.ve3jf.ampr.org
  Packet Working Group | http://hydra.carleton.ca

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

11. [ss] Re: Spread Spectrum R&O released WT 97-12

From: Jake Janovetz <janovetz@tempest.ece.uiuc.edu>
Date: Mon, 6 Sep 1999 10:38:04 -0500

To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-38271-1999.09.06-10.50.39--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Yes, all your points are well-taken. I suppose what I was considering
was "closed-loop power control." I just don't like the idea of forcing
all narrow-band AM/FM/CW transmitters to have the ability for closed-
loop power control. [this was meant to be funny]

I guess I just presume that a ham will always use the moniker "When not
in use, turn down the juice."

    Cheers,
    Jake

On Mon, Sep 06, 1999 at 11:17:21AM -0400, Barry McLarnon VE3JF wrote:
> Jake Janovetz <janovetz@tempest.ece.uiuc.edu> wrote:
> > Jeff,
> >
> >   I don't quite understand why power control would be needed
> > for narrow band folks. Power control is used in DSSS CDMA
> > systems to minimize the near-far problem with SS radios. The
> > reason this is crucial is that all the radios are using the same
> > band and are subject to each other as interferers. In narrow
> > band systems, only one station is allowed to transmit. If two
> > start transmitting at the same time, they interfere -- plain and
> > simple. CDMA allows multiple stations to transmit concurrently
> > _without_ interfering through the use of (pseudo-)orthogonal
> > spreading codes, given that power control is efficient.
>
> As Jeff points out, power control on narrowband signals would make
> the spectrum more usable for SS. Moreover, there is even a near-far
> problem of sorts when you consider only narrowband signals. This is
> because narrowband transmitters and receivers are not perfect - the
> transmitters have sidebands outside their nominal bandwidth, and the
> receivers have finite rejection of out-of-band signals. Thus a
> nearby narrowband transmitter can interfere with your reception on
> a different (non-overlapping) frequency. In other words, narrowband
> signals on different channels within a band are only pseudo-orthogonal
> too - power control would allow them to more closely approach the ideal
> of orthogonality.
>
> Barry
>
>
> --
>   Barry McLarnon VE3JF | bm@hydra.carleton.ca
>   Ottawa Amateur Radio Club | bm@lynx.ve3jf.ampr.org
>   Packet Working Group | http://hydra.carleton.ca
>
> ---
> You are currently subscribed to ss as: JANOVETZ@UIUC.EDU
> To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

--
   janovetz@uiuc.edu | Once you have flown, you will walk the earth with
 University of Illinois | your eyes turned skyward, for there you have been,
                        | there you long to return.   -- da Vinci
        PP-ASEL | http://www.ews.uiuc.edu/~janovetz/index.html

---
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12. [ss] Re: Spread Spectrum R&O released WT 97-12

From: Jake Brodsky <frussle@erols.com>
Date: Tue, 07 Sep 1999 10:06:18 -0400
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-38400-1999.09.07-09.17.16--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

On Fri, 3 Sep 1999 16:54:40 -0700, you wrote:

>   The FCC today released the long awaited Report & Order on
>Amateur Radio Spread Spectrum.

Could someone post a URL to the FCC's web site with the R&O text?

Jake Brodsky, mailto:frussle@erols.com

"Nearly fifty percent of all graduates came from
the bottom half of the class."

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

13. [ss] Re: Spread Spectrum R&O released WT 97-12

From: "Hare, Ed, W1RFI" <w1rfi@arrl.org>
Date: Tue, 7 Sep 1999 14:15:50 -0400
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-38445-1999.09.07-13.23.22--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

> From: Greg Jones [mailto:wd5ivd@tapr.org]
> We will be filing a petition for reconsideration. Just part
> of the game, but I wouldn't expect we will see anything changed.

> Does anyone know if an amateur petition for reconsideration
> has ever been
> moved on ?

Hi, Greg,

ARRL was mostly successful in its Petition for Reconsideration wrt the RF
exposure rules. A big part of what we offered was to demonstrate the
difficulties hams would have meeting the rules as first proposed, offered a
reasonable justification for specific changes and offered specific
suggestions as to what the changes should be. When all was said and done,
the rules still met the original requirements, but were done so in a way
that has minimal impact on the Amateur Radio Service.

73 from ARRL HQ,
Ed Hare, W1RFI
ARRL Lab
225 Main St
Newington, CT 06111
860-594-0318
w1rfi@arrl.org

Visit the ARRL Website at http://www.arrl.org/. Check out the ARRL
members-only website at http://www.arrl.org/members/. Have your
ARRL membership number (from your QST mailing label) available the
first time you check in. For answers to many technical questions,
consult the ARRL Technical Information Service page on the ARRL Web
site at http://www.arrl.org/tis.

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

14. [ss] Re: Spread Spectrum R&O released WT 97-12

From: Dewayne Hendricks <dewayne@warpspeed.com>
Date: Tue, 7 Sep 1999 13:58:25 -0700
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-38477-1999.09.07-16.10.38--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

At 07:08 -0700 9/7/99, Jake Brodsky wrote:
>Could someone post a URL to the FCC's web site with the R&O text?

        <http://www.fcc.gov/Bureaus/Wireless/Orders/1999/fcc99234.wp >

-- Dewayne

15. [ss] RE:Base Sttion Controllers...Coded Communications...Applications Engineers

From: Paul Brownlee <pbrownlee@dalycity.org>
Date: Fri, 10 Sep 1999 11:36:24 -0700
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-38913-1999.09.10-13.47.13--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

To All:
        Help! I am trying to get some information on a Base Station
Controller we are using from Coded Communications(now defunct). Maybe some
of the San Diego crowd can help?
        This BSC is circa 1992 for Mobile Data Terminals and Telemetry, it

uses NFBP on FM baseband of 800MHz radio with BPSK, GMSK & DSP. Currently
the unit interfaces a NC5000 Network Controller for PC based message switch.
        We would like to modify the unit to either transmit, FAX or GIF
files currently it is limited to text forms and neumonic strings. Can this
structure be easily changed to allow large local packets to be received and
transmitted? We are looking at 16 K-Bits in file size.
        You may contact me at 650-991-8287 or by email at
Pbrownlee@dalycity.org <mailto:Pbrownlee@dalycity.org> .

                                                                Thanks,
                                                                Paul
Brownlee

You are currently subscribed to ss as: lyris.ss@tapr.org
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16. [ss] RE:Base Sttion Controllers...Coded Communications...Applications Engineers

From: Jeremy McMillan <aphor@sysops.cboe.com>
Date: Mon, 13 Sep 1999 10:59:25 -0500 (CDT)
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Cc: TAPR Spread Spectrum Special Interest Group <ss@lists.tapr.org>
Message-ID: <LYR6751-39373-1999.09.13-11.12.34--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Actually, what it looks like you need is a good session layer protocol on
top of a packet layer protocol that is compatible with these things.
Rather than reinventing the wheel, I suggest you have someone look at the
IP stack code from the 4.4BSD unix distribution. Take what you need, and
say "Some of this code is from the 4.4BSD distribution, Copyright the
Reagents of Berkeley." in the boilerplate, and you can use it any way you
want.

Email me directly if you need an URL to the code. Otherwise, I'd reccomend
learning the basics of IP addressing and packetizing along with TCP
session error handling concepts (unless you already know that stuff).

The reason you will probably need to do this is that digital wireless
performance usually degrades drastically as packet sizes go up. If the
low-level MAC protocol of your equipment is designed for tiny packets,
sending 2KB (16Kb) GIFs through it will not be a graceful implementation.
You need to send your GIFs in tiny chinks and reassemble them on the other
end. This was written by hands far wiser than mine...

On Fri, 10 Sep 1999, Paul Brownlee wrote:

> To All:
>   Help! I am trying to get some information on a Base Station
> Controller we are using from Coded Communications(now defunct). Maybe some
> of the San Diego crowd can help?
>   This BSC is circa 1992 for Mobile Data Terminals and Telemetry, it
> uses NFBP on FM baseband of 800MHz radio with BPSK, GMSK & DSP. Currently
> the unit interfaces a NC5000 Network Controller for PC based message switch.
>   We would like to modify the unit to either transmit, FAX or GIF
> files currently it is limited to text forms and neumonic strings. Can this
> structure be easily changed to allow large local packets to be received and
> transmitted? We are looking at 16 K-Bits in file size.
>   You may contact me at 650-991-8287 or by email at
> Pbrownlee@dalycity.org <mailto:Pbrownlee@dalycity.org> .
>
>   Thanks,
>   Paul
> Brownlee
>
>
> ---
> You are currently subscribed to ss as: mcmillan@cboe.com
> To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org
>
>

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

17. [ss] An interesting spread spectrum patent

From: Dewayne Hendricks <dewayne@warpspeed.com>
Date: Thu, 16 Sep 1999 16:28:17 -0700
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-39958-1999.09.16-18.39.49--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I was looking at the announcement on a local talk to be given
about a new book on fuzzy logic systems written by a guy named Bart
Kosko and I saw his short bio:

At 14:35 -0700 9/16/99, Computer Literacy Events wrote:
> Bart Kosko is a faculty member of the Department of
> Electrical Engineering at the University of Southern
> California. He is a renowned expert of fuzzy systems
> and neural networks, as well as the patent holder of
> the Adaptive Fuzzy Frequency Hopping System (a system
> and method for fuzzy spread spectrum communication).

I thought that I'd share this with the rest of you. The very concept
of a 'fuzzy spread spectrum communication' system seemed to me to be
very funny at the time. Funny in the context of my thinking about
submitting a petition for rulemaking to the FCC to allow fuzzy spread
spectrum communication in the amateur radio service and how I would
even begin to explain it, especially after what we just went thru the
past several years with the SS rulemaking that was just concluded.
Then I thought about some of the possible things the opposition might
say about such systems raising the fuzzy noise floor. Oh well, you
can see where I'm going with this. <g>
        For those of you who'd like to dig further into this novel
concept, the US Patent # is 5539769 and was issued on 7/23/96.

-- Dewayne WA8DZP

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

18. [ss] Re: An interesting spread spectrum patent

From: Brett Glass <brett@lariat.org>
Date: Thu, 16 Sep 1999 18:56:12 -0600
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-39990-1999.09.16-20.09.17--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

At 04:28 PM 9/16/99 -0700, Dewayne Hendricks wrote:

>I thought that I'd share this with the rest of you. The very concept of a 'fuzzy spread spectrum
communication' system seemed to me to be very funny at the time.

Next there'll be "squishy spread spectrum" and "soggy spread spectrum." ;-)

--Brett Glass

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

19. [ss] Fuzzy Spread Spectrum

From: Dennis Silage <silage@astro.ocis.temple.edu>
Date: Fri, 17 Sep 1999 10:24:14 -0400
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-40094-1999.09.17-09.31.51--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Fuzzy spread spectrum by Bart Kosko may not be as fuzzy as its sounds.
Check out his book: Neural Networks for Signal Processing, Prentice Hall,
1992 for a (somewhat) outdated introduction to the whole area. DSP may never
remain as we know it now, what has stayed the same beside our analog
modulation techniques?

Dennis Silage K3DS
ECE Temple University   silage@vm.temple.edu

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

20. [ss] WaveLAN

From: "Orkun Zorba" <orkunz@ayesas.com>
Date: Fri, 17 Sep 1999 17:51:50 +0300
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-40100-1999.09.17-09.59.13--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

>Hi!
>Is there anybody used or know something about
>WaveLAN cards?
>I need a card that I can use in a notebook and
>performs at least 2 Mbps communication without
>an external antenna.
>There are lots of different information and contact
>names in WaveLAN's web site but I haven't reach the
>correct ones yet.
>Looking forward related persons.
>Regards,
>Orkun
>

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

21. [ss] Re: An interesting spread spectrum patent

From: "Sam Guccione" <sguccion@outland.dtcc.edu>
Date: Fri, 17 Sep 1999 11:03:19 -0400
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-40109-1999.09.17-10.14.33--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Bart has a great book on Fuzzy Logic. Very readable. I recommend it.

Dr. Sam Guccione Delaware Technical & Community College
Chair Engineering Terry Campus
Technologies/Physics 1832 North duPont Highway
302-741-2802 Dover, DE 19901
ARS K3BY 302-741-2837 Fax

Delaware Rockets For Schools Payload Page
http://www.dtel.terry.dtcc.edu

-----Original Message-----
From: Dewayne Hendricks <dewayne@warpspeed.com>
To: TAPR Spread Spectrum Special Interest Group <ss@lists.tapr.org>
Date: Thursday, September 16, 1999 7:31 PM
Subject: [ss] An interesting spread spectrum patent

>
> I was looking at the announcement on a local talk to be given
>about a new book on fuzzy logic systems written by a guy named Bart
>Kosko and I saw his short bio:
>
>At 14:35 -0700 9/16/99, Computer Literacy Events wrote:
>> Bart Kosko is a faculty member of the Department of
>> Electrical Engineering at the University of Southern
>> California. He is a renowned expert of fuzzy systems
>> and neural networks, as well as the patent holder of
>> the Adaptive Fuzzy Frequency Hopping System (a system
>> and method for fuzzy spread spectrum communication).
>
>I thought that I'd share this with the rest of you. The very concept
>of a 'fuzzy spread spectrum communication' system seemed to me to be
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>submitting a petition for rulemaking to the FCC to allow fuzzy spread
>spectrum communication in the amateur radio service and how I would
>even begin to explain it, especially after what we just went thru the
>past several years with the SS rulemaking that was just concluded.
>Then I thought about some of the possible things the opposition might
>say about such systems raising the fuzzy noise floor. Oh well, you
>can see where I'm going with this. <g>
> For those of you who'd like to dig further into this novel
>concept, the US Patent # is 5539769 and was issued on 7/23/96.
>

>-- Dewayne WA8DZP
>
>
>---
>You are currently subscribed to ss as: SGUCCION@OUTLAND.DTCC.EDU
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>

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22. [ss] UWB Conference Announcement

From: Dewayne Hendricks <dewayne@warpspeed.com>
Date: Fri, 17 Sep 1999 10:54:03 -0700
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-40133-1999.09.17-13.06.08--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

[Note: I thought that the list would like to see the press release
that went out today on this conference. Take note that Commissioner
Ness will be doing a keynote! Dewayne WA8DZP]

Next Frontier of Wireless Technology to Debut at Washington
Conference Sept. 28-30

Contact: Steve Duchesne, 202-739-0245, for Ultra Wideband;
Web site: http://www.uwb.org

WASHINGTON, Sept. 17 /U.S. Newswire/ -- U.S. leaders in the high
technology field will gather in Washington later this month to
introduce the next wave of wireless technology that could one day
revolutionize the way private industries, public safety
organizations, the military and consumers transmit and receive data,
audio and video images.

The new technology known as Ultra Wideband (UWB) represents a
breakthrough in wireless communication, radar and positioning. As USA
Today reported earlier this year, "If the technology lives up to its
promise, it would be like the leap from vacuum tubes to the
transistor or from oil lamps to light bulbs, touching every home and
workplace."

The power of UWB positioning and radar to precisely measure
distance and movement has myriad applications in public safety,
medical telemetry, asset protection, engineering and construction.
It can, for example, display the positions of individuals inside a
building or within the rubble of a structure demolished by a natural
disaster, establish a security "bubble" around one's home or car,
detect landmines and enhance aviation safety.

This innovative technology will be the focus of the first
International UWB Conference to be held from Sept. 28 through
Sept. 30 at the Crowne Plaza Hotel and Sphinx Club in Washington. The
conference is sponsored by the UWB Working Group, which represents a
coalition of parties that are pioneering the technology.

Researchers from more than a dozen nations and senior U.S.
government officials will join the UWB Working Group in the event
that will include presentations, panel discussions and demonstrations
of the groundbreaking technology. Federal Communications Commissioner
Susan Ness will be the featured speaker on Wednesday, Sept. 29.

In addition to Commissioner Ness, speakers at the three-day event
will include Lauren "Pete" Belvin, Counsel to the Senate Commerce
Committee communications subcommittee; Ed Hearst, Majority Counsel to
the House Commerce Committee; FCC Chief of Engineering and Technology
Dale Hatfield, FCC Chief Technologist Stagg Newman; and Charles
Pluckhahn, Vice President for Telecommunications of Stephens Inc.

Conference presenters will review UWB commercial markets, radio
spectrum policy, signal modeling, electronics design, and future
directions. Researchers from Canada, Denmark, Germany, Iran, Italy,
Japan, Netherlands, New Zealand, Russia, Spain, and the United
Kingdom will join U.S. corporate, academic and national security
representatives, as well as federal regulators and congressional
leaders in exploring issues facing UWB deployment.

The conference theme, "Breaking the Wave," symbolizes UWB as a
departure from the traditional means of transmission through radio
waves. Instead of radio sine waves, most UWB devices emit extremely
short pulses, which create a broadband spectrum, at remarkably low
energy levels. For the consumer, wireless phones and Internet
appliances based on UWB will offer high capacity, high data rates,
ultra-secure communication, low cost and extremely low power
consumption, without interfering with conventional uses of the
airwaves. In the words of The New York Times, UWB is a
"...communications technology that has the potential to make vastly
more efficient use of the increasingly precious radio spectrum."

The conference will also include an open Working Group business
meeting, UWB equipment demonstrations and exhibits, and a reception
on the evening of Sept. 29 at the Information Age and Science
Exhibits, National Museum of American History.

The UWB Working Group is made up of 50 organizations and
entrepreneurs devoted to the development and advancement of ultra
wideband technology. Some of the group includes Aether Wire &
Location Inc.; T.N. Cokenias Consulting; Dandin Group; Honeywell
Technology Center; Interval Research Corp.; Pulson Medical Inc.;
Sensors & Sofware Inc.; Time Domain Corporation; TRW, Incorporated;
Tucson Amatuer Packet Radio; the University of Southern California;
Xtreme Spectrum, Inc.; Zircon Corporation.

For more information or to register for the conference, visit the
UWB Working Group website at www.uwb.org or contact conference
coordinator Anne Teillet (anne.teillet@tdsi.com) or Tanya Diamond
(tanya.diamond@dsi.com) at 256-922-9229.

For information on UWB technology, contact Rachel Reinhardt
(rachel.reinhardt@tdsi.com) at 256-922-9229.
-0-

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To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

23. [ss] Re: An interesting spread spectrum patent

From: Robert McGwier <rwmcgwier@home.com>
Date: Sat, 18 Sep 1999 12:04:28 -0400
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-40237-1999.09.18-11.15.35--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

What is name of the book, the publisher, better yet: the ISBN?

Thanks
Bob

At 11:03 AM 09/17/1999 -0400, you wrote:
>Bart has a great book on Fuzzy Logic. Very readable. I recommend it.
>
>
>
>Dr. Sam Guccione   Delaware Technical & Community College
>Chair Engineering   Terry Campus
>Technologies/Physics 1832 North duPont Highway
>302-741-2802   Dover, DE 19901
>ARS K3BY   302-741-2837 Fax
>
>   Delaware Rockets For Schools Payload Page
>   http://www.dtel.terry.dtcc.edu
>

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To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

24. [ss] Re: An interesting spread spectrum patent

From: Jeff King <jeff@aerodata.net>
Date: Sat, 18 Sep 1999 14:42:38 -0400
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-40254-1999.09.18-13.53.20--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Fuzzy Thinking "The new Science of Fuzzy Logic"
Author: Bart Kosko
Copyright 1993
ISBN 0-7868-8021-X

I don't know, I didn't like it as much as Sam. Seemed like Kosko kept
going over the same thing. I guess it depends what your end goal is
(I was trying to develop a fuzzy logic based EATC system at the
time).

-Jeff

Robert McGwier wrote:

> What is name of the book, the publisher, better yet: the ISBN?
>
> Thanks
> Bob
>
> At 11:03 AM 09/17/1999 -0400, you wrote:
> >Bart has a great book on Fuzzy Logic. Very readable. I recommend it.
> >
> >
> >
> >Dr. Sam Guccione   Delaware Technical & Community College
> >Chair Engineering   Terry Campus
> >Technologies/Physics 1832 North duPont Highway
> >302-741-2802   Dover, DE 19901
> >ARS K3BY   302-741-2837 Fax
> >
> >   Delaware Rockets For Schools Payload Page
> >   http://www.dtel.terry.dtcc.edu
> >
>
> ---
> You are currently subscribed to ss as: jeff@aerodata.net
> To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

---
You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

25. [ss] DCC this coming Weekend in Phoenix

From: Greg Jones <wd5ivd@tapr.org>
Date: Sat, 18 Sep 1999 14:40:46 -0500
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-40276-1999.09.18-14.54.55--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Don't forget that the 1999 ARRL and TAPR Digital Communications Conference
is being held this next week Sept 24-26 in Phoenix, AZ.

For more details visit: http://www.tapr.org/dcc

The tentative schedule and proceedings abstracts are now available on the
conference page.

Look forward to seeing you at this year's DCC.

Cheers - Greg Jones, WD5IVD

Greg Jones, WD5IVD
        President TAPR (http://www.tapr.org)
        PhD Candidate, Instructional Technology, UT Austin

email: wd5ivd@tapr.org
web: http://www.tapr.org/~wd5ivd

Experience is what you get when you were expecting something else.

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

26. [ss] Re: An interesting spread spectrum patent

From: Dr Samuel Guccione <sguccion@outland.dtcc.edu>
Date: Sat, 18 Sep 1999 17:57:01 -0400 (EDT)
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-40303-1999.09.18-17.08.10--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

This gives his overview of Fuzzy Logic with his personal bias. Not useable
to create fuzzy logic systems, etc. Not an engineering book.

Sam

On Sat, 18 Sep 1999, Jeff King wrote:

> Fuzzy Thinking "The new Science of Fuzzy Logic"
> Author: Bart Kosko
> Copyright 1993
> ISBN 0-7868-8021-X
>
> I don't know, I didn't like it as much as Sam. Seemed like Kosko kept
> going over the same thing. I guess it depends what your end goal is
> (I was trying to develop a fuzzy logic based EATC system at the
> time).
>
> -Jeff
>
> Robert McGwier wrote:
>
> > What is name of the book, the publisher, better yet: the ISBN?
> >
> > Thanks
> > Bob
> >
> > At 11:03 AM 09/17/1999 -0400, you wrote:
> > >Bart has a great book on Fuzzy Logic. Very readable. I recommend it.
> > >
> > >
> > >
> > >Dr. Sam Guccione   Delaware Technical & Community College
> > >Chair Engineering   Terry Campus
> > >Technologies/Physics 1832 North duPont Highway
> > >302-741-2802   Dover, DE 19901
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> > >   Delaware Rockets For Schools Payload Page
> > >   http://www.dtel.terry.dtcc.edu
> > >
> >
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>
>
> ---
> You are currently subscribed to ss as: SGUCCION@OUTLAND.DTCC.EDU
> To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org
>
>

```
************************************************************
Dr. Sam Guccione        Delaware Technical & Community College
Chair Engineering       Terry Campus
Technologies/Physics    1832 North duPont Highway
302-741-2802            Dover, DE  19901
ARS K3BY                302-741-2837 Fax
************************************************************
        Delaware Rockets For Schools Payload Home Page
           http://www.dtel.terry.dtcc.edu/~rocket
************************************************************
```

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To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

27. [ss] Re: DCC this coming Weekend in Phoenix

From: Robert McGwier <rwmcgwier@home.com>
Date: Sun, 19 Sep 1999 02:24:18 -0400
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-40409-1999.09.19-01.35.54--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Greg:

I received my confirmation from Dot today that all has been
paid. The left hand doesn't know what the right hand is doing?
;-)!!

My only disappointment is that all of the pending approvals
for release have not been signed at work. They are inspecting
every claim of "public source" with a fine tooth comb. It will
probably take two more months. ;-(

Bob

At 02:40 PM 09/18/1999 -0500, you wrote:
>Don't forget that the 1999 ARRL and TAPR Digital Communications Conference
>is being held this next week Sept 24-26 in Phoenix, AZ.
>
>For more details visit: http://www.tapr.org/dcc
>
>The tentative schedule and proceedings abstracts are now available on the
>conference page.
>
>Look forward to seeing you at this year's DCC.
>
>Cheers - Greg Jones, WD5IVD
>
>
>-----
>Greg Jones, WD5IVD
>   President TAPR (http://www.tapr.org)
>   PhD Candidate, Instructional Technology, UT Austin
>
>email: wd5ivd@tapr.org
>web: http://www.tapr.org/~wd5ivd
>
>
>Experience is what you get when you were expecting something else.
>
>---
>You are currently subscribed to ss as: RWMCGWIER@HOME.COM
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---
You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

28. [ss] Re: WaveLAN

From: "Nicol□s Alejandro Contreras Crenovich" <crenovich@hotmail.com>
Date: Wed, 22 Sep 1999 04:18:44 GMT
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Cc: ss@lists.tapr.org
Message-ID: <LYR6751-41031-1999.09.21-23.31.36--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Hi:

Maybe MegahHertz could be an alternative,
they have some card, called "redio-modem",
I hope it help you, anyway Good Luck!!

>From: "Orkun Zorba" <orkunz@ayesas.com>
>Reply-To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
>To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
>Subject: [ss] WaveLAN
>Date: Fri, 17 Sep 1999 17:51:50 +0300
>
> >Hi!
> >Is there anybody used or know something about
> >WaveLAN cards?
> >I need a card that I can use in a notebook and

> >performs at least 2 Mbps communication without
> >an external antenna.
> >There are lots of different information and contact
> >names in WaveLAN's web site but I haven't reach the
> >correct ones yet.
> >Looking forward related persons.
> >Regards,
> >Orkun
> >
>
>
>---
>You are currently subscribed to ss as: crenovich@hotmail.com
>To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org
>

_____
Get Your Private, Free Email at http://www.hotmail.com

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

29. [ss] Frequency accuracy

From: "Kenneth H. Sinclair" <khs@ieee.org>
Date: Wed, 22 Sep 1999 10:40:05 -0400
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-41097-1999.09.22-09.51.54--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Can someone answer a novice engineering question for me? How do low-cost devices like pagers meet tight specifications for frequency accuracy?

I believe most of the narrowband messaging standards (Flex, Reflex, Mobitex...)
require transmit frequency accuracy within 1ppm. But crystal accuracy is 20-50ppm and even TCXOs are 2-5ppm. So what reference is used in these devices? Do they lock to a received carrier? Even in half-duplex standards?

Thanks, in advance.

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

30. [ss] Re: Frequency accuracy

From: "Classified **********" <rjw_4@hotmail.com>
Date: Wed, 22 Sep 1999 14:57:50 GMT
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-41103-1999.09.22-10.08.58--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Ken, They don't. Listen to some of the repeaters on the bands. You'll hear it over and over again, "those #$%* PAGERS"!!! A fellow ham and broadcast engineer had to go to the Nth degree to prove to a pager company that their system was causing interference. Finally with paper work in hand he showed them how spurious their system was.

Rick

P.S. The pager system in questions "JUST" barely meets FCC regs now.

>From: "Kenneth H. Sinclair" <khs@ieee.org>
>Reply-To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
>To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
>Subject: [ss] Frequency accuracy
>Date: Wed, 22 Sep 1999 10:40:05 -0400
>MIME-Version: 1.0
>From bounce-ss-10818@lists.tapr.org Wed Sep 22 07:44:34 1999
>Received: from [204.17.217.24] by hotmail.com (2.1) with ESMTP id
>MHotMailB9B23651006BD820F398CC11D91809DA0; Wed Sep 22 07:44:34 1999
>Return-Path: <khs@ieee.org>
>Message-ID:
><LYR10818-41097-1999.09.22-09.51.54--rjw_4#hotmail.com@lists.tapr.org>
>X-Priority: 3 (Normal)
>X-MSMail-Priority: Normal

>X-MimeOLE: Produced By Microsoft MimeOLE V5.00.2615.200
>Importance: Normal
>List-Unsubscribe: <mailto:leave-ss-6751T@lists.tapr.org>
>List-Software: Lyris Server version 3.0
>List-Subscribe: <mailto:subscribe-ss@lists.tapr.org>
>List-Owner: <mailto:owner-ss@lists.tapr.org>
>X-List-Host: Tucson Amateur Packet Radio <http://www.tapr.org>
>X-Message-Id: <LNBBKMOJDBNJNJIEOGCICEBJCEAA.khs@ieee.org>
>Sender: bounce-ss-10818@lists.tapr.org
>Precedence: bulk
>
>Can someone answer a novice engineering question for me? How do low-cost
>devices like pagers meet tight specifications for frequency accuracy?
>
>I believe most of the narrowband messaging standards (Flex, Reflex,
>Mobitex...)
>require transmit frequency accuracy within 1ppm. But crystal accuracy is
>20-50ppm and even TCXOs are 2-5ppm. So what reference is used in these
>devices? Do they lock to a received carrier? Even in half-duplex
>standards?
>
>Thanks, in advance.
>
>
>---
>You are currently subscribed to ss as: rjw_4@hotmail.com
>To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org
>

_____
Get Your Private, Free Email at http://www.hotmail.com

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

31. [ss] Re: WaveLAN

From: "Kent's BGA Account" <akent@bga.com>
Date: Wed, 22 Sep 1999 11:44:05 -0500
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-41117-1999.09.22-11.55.28--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

For wireless modems, I just installed one at my home/business. It's the
cheapest one I've found, and it seems to work very well.

It's the Webgear Aviator Pro. It is standard 2mbit 802.11, with 1mbit
fallback. These are 2.4 gigahertz, 100 milliwatt hoppers. They are PCMCIA
only with a very small built in flip out antenna. You can build adhoc peer
to peer networks by just throwing these PCMCIA cards into notebooks, or
desktop systems (with their adapter), or you can get the access point for
connecting them to a wired lan, which is what I did.

I have a 100mb network, through a firewall into a cable modem, with one
Webgear access point on the hub in my office. A desktop 500 feet away in my
home has a webgear PCMCIA card installed. I also have a notebook with a
webgear PCMCIA card, so I can sit outside and work. It was a bit tricky to
situate the access point and desktop that far from each other. I have only
two wooden walls between the two systems, and I had to aim the antennas at
each other almost perfectly for it to work well. The antennas are fairly
directional.

I found the PCMCIA cards through www.shopper.com for a little over $100. The
access points are around $425, or so. The PCMCIA adapter for desktops is
around $39.

Webgear is at www.webgear.com, if you want to take a look.

I have had no problems, so far. The system seems to be fairly robust. Be
sure to get the latest driver software from their website if you get some of
these. It allows for much less power consumption in a notebook system.

I am in no way connected with Webgear.

Kent

----- Original Message -----
From: Nicolás Alejandro Contreras Crenovich <crenovich@hotmail.com>
To: TAPR Spread Spectrum Special Interest Group <ss@lists.tapr.org>

Cc: <ss@lists.tapr.org>
Sent: Tuesday, September 21, 1999 11:18 PM
Subject: [ss] Re: WaveLAN

> Hi:
>
> Maybe MegahHertz could be an alternative,
> they have some card, called "redio-modem",
> I hope it help you, anyway Good Luck!!
>
>
> >From: "Orkun Zorba" <orkunz@ayesas.com>
> >Reply-To: "TAPR Spread Spectrum Special Interest Group"
<ss@lists.tapr.org>
> >To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
> >Subject: [ss] WaveLAN
> >Date: Fri, 17 Sep 1999 17:51:50 +0300
> >
> > >Hi!
> > >Is there anybody used or know something about
> > >WaveLAN cards?
> > >I need a card that I can use in a notebook and
> > >performs at least 2 Mbps communication without
> > >an external antenna.
> > >There are lots of different information and contact
> > >names in WaveLAN's web site but I haven't reach the
> > >correct ones yet.
> > >Looking forward related persons.
> > >Regards,
> > >Orkun
> > >
> >
> >
> >---
> >You are currently subscribed to ss as: crenovich@hotmail.com
> >To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org
> >
>
> ____
> Get Your Private, Free Email at http://www.hotmail.com
>
> ---
> You are currently subscribed to ss as: AKENT@BGA.COM
> To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org
>
>

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

32. [ss] Re: Frequency accuracy

From: Gordon Dey <Gordon_Dey@mitel.CA>
Date: Wed, 22 Sep 1999 13:22:25 -0400
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-41122-1999.09.22-12.34.01--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

The stuff I worked on used direct conversion to 512-2,400 BAUD.
The pager doesn't really care if the receiver is centered (although
the better it is, the lower the signal strength required for a
given BER rate). If the received signal is higher in frequency than
the LO, its a mark. If it's lower, it's a space. The pager really
doesn't care about the relationship between it's LO and the transmitters
carrier frequency.
Doesn't noise then look like a stream of bits? Yes, it does.
A combination of software and/or hardware performs frame
and bit synchronization with the bit-stream to seperate
noise from carrier, and when it's recognized the 'diddle' pattern,
i.e. 576 bits of alternating 1s and 0s, then pager is "locked".
Why do it this way?

1. Cost
2. Power consumption
3. Patents

In that order.

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

33. [ss] Frequency accuracy of mobile transmitters

From: "Kenneth H. Sinclair" <khs@ieee.org>
Date: Wed, 22 Sep 1999 14:11:33 -0400
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-41127-1999.09.22-13.23.25--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I should have been clearer, it's the accuracy of the mobile's transmit
frequency I'm curious about. As in two-way paging. Fixed transmitters
can have big expensive frequency references, and mobile receivers can
accomodate frequency inaccuracy, but mobile transmitters seem highly
constrained and I wonder how 1ppm accuracy is achieved in those
circumstances.

> Sent: Wednesday, September 22, 1999 1:22 PM
> Subject: [ss] Re: Frequency accuracy
>
> The stuff I worked on used direct conversion to 512-2,400 BAUD.
> The pager doesn't really care if the receiver is centered (although
> the better it is, the lower the signal strength required for a
> given BER rate). If the received signal is higher in frequency than
> the LO, its a mark. If it's lower, it's a space. The pager really
> doesn't care about the relationship between it's LO and the transmitters
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> Doesn't noise then look like a stream of bits? Yes, it does.
> A combination of software and/or hardware performs frame
> and bit synchronization with the bit-stream to seperate
> noise from carrier, and when it's recognized the 'diddle' pattern,
> i.e. 576 bits of alternating 1s and 0s, then pager is "locked".
> Why do it this way?
>
> 1. Cost
> 2. Power consumption
> 3. Patents
>
> In that order.
>
> ---
> You are currently subscribed to ss as: khs@ieee.org
> To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

---
You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

34. [ss] Re: Frequency accuracy of mobile transmitters

From: Ron Schroeder <rjs@bnl.gov>
Date: Wed, 22 Sep 1999 15:00:22 -0400
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-41137-1999.09.22-14.11.32--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

2-5ppm is fairly easy with a TCXO smaller than a sugar cube down to 16mm x
8mm x3mm in a surface mount package.

Ron

At 02:11 PM 9/22/99 -0400, you wrote:
>I should have been clearer, it's the accuracy of the mobile's transmit
>frequency I'm curious about. As in two-way paging. Fixed transmitters
>can have big expensive frequency references, and mobile receivers can
>accomodate frequency inaccuracy, but mobile transmitters seem highly
>constrained and I wonder how 1ppm accuracy is achieved in those
>circumstances.

Ron Schroeder
rjs@bnl.gov
911A X4561

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

35. [ss] Re: Frequency accuracy

From: "Bobbie S. Johnson" <bobbiej@vnet.net>
Date: Thu, 23 Sep 1999 00:06:49 -0400
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-41167-1999.09.22-23.16.22--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Hi Kenneth. The tight specs apply to the transmitter only. The pager can
have a very wide receiving bandwidth (which is usually the case) which
causes them to receive erroneous data from other transmitters.
The transmitters are allowed a bandwidth of frequencies to carry the tones
for the pager message. So the actual transmitted signal is the center
frequency plus/minus the accuracy percentage plus the frequency of the tones
and sidebands.
The transmitted frequency without modulation must be within the specified
tollerance. With modulation by two or more tones, the output frequency
becomes extremely complicated and usually is filtered to reduce unwanted
sideband frequencies being transmitted.

Bobbie

----- Original Message -----
From: Kenneth H. Sinclair <khs@ieee.org>
To: TAPR Spread Spectrum Special Interest Group <ss@lists.tapr.org>
Sent: Wednesday, September 22, 1999 10:40 AM
Subject: [ss] Frequency accuracy

> Can someone answer a novice engineering question for me? How do low-cost
> devices like pagers meet tight specifications for frequency accuracy?
>
> I believe most of the narrowband messaging standards (Flex, Reflex,
> Mobitex...)
> require transmit frequency accuracy within 1ppm. But crystal accuracy is
> 20-50ppm and even TCXOs are 2-5ppm. So what reference is used in these
> devices? Do they lock to a received carrier? Even in half-duplex
> standards?
>
> Thanks, in advance.
>
>
> ---
> You are currently subscribed to ss as: BOBBIEJ@VNET.NET
> To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org
>

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

36. [ss] Re: Frequency accuracy

From: "f1usa" <f1usa@wanadoo.fr>
Date: Thu, 23 Sep 1999 10:00:16 +0200
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-41204-1999.09.23-03.13.14--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Kenneth,

>I believe most of the narrowband messaging standards (Flex, Reflex,
>Mobitex...) require transmit frequency accuracy within 1ppm.

I can only talk about MOBITEX.

Usually, the GMSK demodulator loop use a PLL, so no specific accuracy is
required (rx point of vue).

73 de F1USA, Stephane (Oleron island, France)

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

37. [ss] Re: Frequency accuracy <LYR5362-41167-1999.09.22-23.16.22--JAUSTEN#TNTECH.EDU@lists.tapr.org>

From: Jeffrey Austen <jausten@tntech.edu>
Date: Thu, 23 Sep 1999 08:58:09 -0600
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-41224-1999.09.23-09.12.37--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Very high accuracy can be achieved by using GPS or other time references. A low cost example is the TAPR Totally Accurate Clock.

The high accuracy is needed because pager systems use multiple transmitters on the same frequency to provide coverage over a large area. In the region where transmitter coverage overlaps the pager will receive signals from both transmitters and these signals will interfere with each other, with the effects changing continuously as the user of the pager moves. For most systems this is a disasterous situation; almost everybody has experienced this listening to an FM station on a car radio when driving between cities. However, if the system is designed to operate in such an environment it can be made to work.

In order for the receiver to be able to function in such an environment the symbol timing (bit timing, if binary) for all transmitters must be exactly synchronized so that it does not matter which transmitter the receiver is receiving at a particular instant. Due to the slow symbol rate this is not difficult to achieve and the propagation delays are of minor concern. Note that in order for this to work noncoherent (or differentially coherent) modulation needs to be used so that there is no synchronization delay in the receiver.

The carrier frequency, being much higher, does not allow the same to be done because motion of the receiver and varying propagation causes essentially random phase variations between the multiple transmitters as observed at the receiver. When both signals are about the same strength the interference between transmitters will vary proportionally to the frequency difference between them ("beat frequency") so it is necessary to keep the transmitters closely synchronized in frequency.

Jeff, k9ja

Jeffrey Austen | Tennessee Technological University
jausten@tntech.edu | Box 5004
+1-931-372-3485 | Cookeville Tennessee 38505 U.S.A.

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

38. [ss] info

From: "F_L_FISHER" <F_L_FISHER@email.msn.com>
Date: Thu, 23 Sep 1999 09:36:59 -0700
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-41243-1999.09.23-11.48.31--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

K

1.) What ticket is required for APR? I have none yet.

2.) Kenwood TM-VLA mobile with 12v power supply looks like a good all around radio as well as for APR. Anyone agree or have a better idea? All suggestions appreciated.

Thanks,
Frank

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To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

39. [ss] Re: info

From: Derek Lassen <kn6td@clubnet.net>
Date: Thu, 23 Sep 1999 16:07:21 -0700
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-41277-1999.09.23-18.23.19--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Technician (No code requirement)
At 09:36 AM 9/23/99 -0700, you wrote:
>K
>
>1.) What ticket is required for APR? I have none yet.
>
>2.) Kenwood TM-VLA mobile with 12v power supply looks like a good all
>around radio as well as for APR. Anyone agree or have a better idea?
>All suggestions appreciated.
>
>Thanks,
>Frank
>
>
>
>
>
>
>---
>You are currently subscribed to ss as: KN6TD@CLUBNET.NET
>To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org
>

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

40. [ss] 2.4 Ghz WaveLAN PCMCIA

From: Derek Lassen <kn6td@clubnet.net>
Date: Thu, 23 Sep 1999 16:46:14 -0700
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-41281-1999.09.23-19.01.18--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Anybody want to trade their short 900 mhz WaveLANs for my PCMCIA WAVELANS?

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

41. [ss] Re: info

From: smorris@mindspring.com
Date: Thu, 23 Sep 1999 20:09:38 -0400
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-41282-1999.09.23-19.18.40--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Technician is required for APRS.

As to radios, any radio will work. The TM-V7A is very flexible. It will
allow you to run APRS on VHF and allow you to talk on VHF at the same time.
I have one and I really like it. Order the kit to mount the display in
another place. I can never find a good place in today's cars/trucks to
mount the radio where it is a good viewing spot.

Scott
----- Original Message -----
From: F_L_FISHER <F_L_FISHER@email.msn.com>
To: TAPR Spread Spectrum Special Interest Group <ss@lists.tapr.org>
Sent: Thursday, September 23, 1999 12:36 PM
Subject: [ss] info

> K
>
> 1.) What ticket is required for APR? I have none yet.
>
> 2.) Kenwood TM-VLA mobile with 12v power supply looks like a good all
> around radio as well as for APR. Anyone agree or have a better idea?

> All suggestions appreciated.
>
> Thanks,
> Frank
>
>
>
>
>
>
> ---
> You are currently subscribed to ss as: SMORRIS@MINDSPRING.COM
> To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org
>

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

42. [ss] Re: info

From: "F_L_FISHER" <F_L_FISHER@email.msn.com>
Date: Thu, 23 Sep 1999 17:31:56 -0700
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-41289-1999.09.23-19.43.46--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Thanks Scott on ticket answer and the encouragement on the Kenwood
TM-V7A. I'm good to go to AES for $459.95. Correcto?

Frank

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

43. [ss] Re: info

From: "Tim Cunningham" <tim_cunningham@mindspring.com>
Date: Fri, 24 Sep 1999 22:14:55 -0500
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-41400-1999.09.24-22.27.28--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

>As to radios, any radio will work. The TM-V7A is very flexible. It will
>allow you to run APRS on VHF and allow you to talk on VHF at the same time.
>I have one and I really like it. Order the kit to mount the display in
>another place. I can never find a good place in today's cars/trucks to
>mount the radio where it is a good viewing spot.
>
>Scott

Does the TM-V7A have a PTT line on the microphone or is the PTT signal
digitally encoded from the microphone like many of the other new radio's
on the market?

I have another brand of radio I have been using with an APRS Mic-Encoder,
but there is no PTT line on the microphone plug. Instead, the PTT signal is
encoded on a serial stream of data to the radio from the microphone and
the radio decodes the information. The APRS Mic-E does not work with
this type of arrangement at all, unless you get real creative with some
fancy
modifications to the radio. The radio I am using has a 1200/9600 packet
connector on the back of the radio that I wired to the Mic-E, but I had to
modify the radio to the get a decoded PTT signal back to the Mic-E so it
would hold the PTT line at the packet jack on the radio. Unfortunately,
when the PTT is dropped from the microphone, the radio unkeys before the
microprocessor in the radio looks at the PTT signal at the packet jack.
This
is a real pain. The result is that my signal drops momentarily when I unkey
the microphone and rekeys the transmitter when it discovers that the PTT
is activated from the packet jack (PTT challenged). So, when I am on a
voice repeater and unkey the microphone using my Mic-E, there is a short
squelch tail before the data from the Mic-E is presented at the end of a
transmission. This requires the end of transmission to be longer in order

for the transmitter to settle and send the APRS posit which equates to
about 200-300ms longer than what it really should be if the transmitter did
not
drop in the first place. Considering that most courtesy beacons are more
annoying than the Mic-E posit, it may not matter anyway.

Anybody who wants to use a Mic-E or similar device on some of these new
radio's should be aware of this condition as a Mic-E will not work without
some radio modification if the radio does not have a dedicated PTT line.
In some cases it may not be possible or require major effort.

If one wants to merely use a radio for APRS on 2M just to beacon on the
APRS network, most radio's that have a packet data jack or a true hardwired
old fashion PTT line on the microphone jack can be utilized. Most can be
modified if they do not meet the above requirements. However, my point
is specifically directed to those who may be interested in using a Mic-E or
similar device to attached an APRS packet posit at the end of a voice
transmission.

73's,

Tim - N8DEU
Huntsville

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

44. [ss] E-Commerce

From: Administrator <Administrator@Torabi.com>
Date: Sun, 26 Sep 1999 17:44:02 -0700
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-41693-1999.09.26-19.54.59--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

E-Commerce

Internet Interactive Secure On-line E-Commerce Management System.
Complete Design, Development, Management, and Maintenance.
Microsoft Back Office Platform.
Storing information in MS Sql Server Database;
Complete tracking, retrieving, and reporting capabilities in real time.

All you need is your browser to run e-business.

Internet Site: www.Torabi.com
Email: Ehsan@Torabi.com
Phone: (310) 573-9843

Please review my Resume Profile online at: http://Torabi.com
Or visit http://LAMarket.net

Thank you
Ehsan Torabi
Information Systems Analyst

P.S. Sorry for interruption, I was looking for job (e-commerce project);
I thought you might be able to help. Thank you for your kindness.

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

45. [ss] Re: An interesting spread spectrum patent

From: "valantine nyenty" <vnchemty@hotmail.com>
Date: Wed, 29 Sep 1999 10:51:00 PDT
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-42303-1999.09.29-13.02.54--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Please Help Me.

I would like to get a complete set of equipements to be able to perform
experiments on DIRECT SEQUENCE SPREAD SPECTRUM SYSTEMS
AS WELL AS GENERAL LABORATORY EQUIPEMENTS FOR A radio frequency Design. This
is to peermit my laboratory do do research in the area of spread spectrum
systems.
please this is urgent as a budget is already in place.

_____
Get Your Private, Free Email at http://www.hotmail.com

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

October 1999

Original source file: ss.9910
Source: http://ftp.tapr.org/tapr_history/SIG_Archives/spread-spectrum-sig/mail_archive/ss.9910

1. [ss] EME with spread spectrum?

From: Jeff King <jeff@aerodata.net>
Date: Fri, 01 Oct 1999 16:52:51 -0400
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-42640-1999.10.01-16.03.40--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Is it possible to do moonbounce (EME) communications with spread spectrum?

I just had someone on another group (APRSSIG) claim it was not possible, but
my thinking is it should work find and in fact offer some significant advantages

over narrowband.

Thanks!

Jeff wb8wka

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

2. [ss] Re: EME with spread spectrum?

From: Derek Lassen <kn6td@clubnet.net>
Date: Fri, 01 Oct 1999 19:19:48 -0700
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-42668-1999.10.01-21.35.47--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Well, I havent't tried it but I think the specular reflection off of the
moon would hose the phase coherencey of the return signal.
How would you demodulate it?

At 04:52 PM 10/1/99 -0400, you wrote:
>Is it possible to do moonbounce (EME) communications with spread spectrum?
>
>I just had someone on another group (APRSSIG) claim it was not possible, but
>my thinking is it should work find and in fact offer some significant
advantages
>
>over narrowband.
>
>Thanks!
>
>Jeff wb8wka
>
>
>
>---
>You are currently subscribed to ss as: KN6TD@CLUBNET.NET
>To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org
>

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

3. [ss] Re: EME with spread spectrum?

From: Jeff King <jeff@aerodata.net>
Date: Sat, 02 Oct 1999 03:28:20 -0400
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-42732-1999.10.02-02.37.05--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Derek Lassen wrote:

At 04:52 PM 10/1/99 -0400, Jeff King wrote:
>Is it possible to do moonbounce (EME) communications with spread spectrum?

> Well, I havent't tried it but I think the specular reflection off of the

> moon would hose the phase coherencey of the return signal.
> How would you demodulate it?

How would this be different then a terrestrial spread spectrum
signal with multipath? This seems to be dealt with quite effectively.
Now, one does not have to run high chip rates as we would be
looking for a replacement for low speed CW.

Don't know, but how is this different then multipath? I believe the
strongest component will be off of the point of the moon closest
to you, hence my thought this may not be much different then
multipath.

Thanks

-Jeff

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To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

4. [ss] Re: EME with spread spectrum?

From: "Jeff Millar" <jeff@wa1hco.mv.com>
Date: Sat, 2 Oct 1999 10:02:41 -0400
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-42745-1999.10.02-09.13.45--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

The moon generates a lot of multipath with varying doppler that's different
from terrestrial links.

Some recent surfing turned up discussion of Orthogonal Frequency Division
Multiplex (OFDM). A form of spread spectrum that deals with multipath very
well...developed in Europe for wideband digital audio and digitial
television.

I think a computer running very slow OFDM algorithms (mostly FFT) through a
sound card and then into an SSB transmitter would make a very interesting
moon bounce system.

For more info check out...

    www.bbc.co.uk/rd/pubs/papers/paper_15/paper_15.html

Searching for OFDM via www.google.com also turns up a bunch.

jeff

----- Original Message -----
From: Jeff King <jeff@aerodata.net>
To: TAPR Spread Spectrum Special Interest Group <ss@lists.tapr.org>
Sent: Saturday, October 02, 1999 3:28 AM
Subject: [ss] Re: EME with spread spectrum?

>
>
> Derek Lassen wrote:
>
> At 04:52 PM 10/1/99 -0400, Jeff King wrote:
> >Is it possible to do moonbounce (EME) communications with spread
spectrum?
>
> > Well, I havent't tried it but I think the specular reflection off of the
> > moon would hose the phase coherencey of the return signal.
> > How would you demodulate it?
>
> How would this be different then a terrestrial spread spectrum
> signal with multipath? This seems to be dealt with quite effectively.
> Now, one does not have to run high chip rates as we would be
> looking for a replacement for low speed CW.
>
> Don't know, but how is this different then multipath? I believe the
> strongest component will be off of the point of the moon closest
> to you, hence my thought this may not be much different then
> multipath.

>
> Thanks
>
> -Jeff
>
>
>
> ---
> You are currently subscribed to ss as: JEFF@WA1HCO.MV.COM
> To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org
>
>

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

5. [ss] Re: EME with spread spectrum?

From: Magne Mæhre <magne@radar.no>
Date: Mon, 04 Oct 1999 15:41:20 +0200
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-43194-1999.10.04-08.53.15--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Jeff Millar wrote:
>
> Some recent surfing turned up discussion of Orthogonal Frequency Division
> Multiplex (OFDM). A form of spread spectrum that deals with multipath very
> well...developed in Europe for wideband digital audio and digitial
> television.

OFDM is used for the Digital Audio Broadcasting service (DAB) in
Europe (systems operational in UK, Sweden and Norway at least).

Here in Norway they broadcast 6 national broadcasters on
the same RF-channel all over the contry (same frequency on
all transmitters). If I remember correctly it is an approx.
1.2 MHz channel, divided into 1536 (?) carriers. I don't have
any details, but I guess you can find quite a bit of information
on   http://www.etsi.org/ - who, unlike ITU, publishes its
recommendations and standards on the web.

--Magne / la1bfa

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

6. [ss] Re: EME with spread spectrum?

From: Jake Janovetz <janovetz@tempest.ece.uiuc.edu>
Date: Mon, 4 Oct 1999 09:22:17 -0500
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-43202-1999.10.04-09.40.50--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

On Mon, Oct 04, 1999 at 03:41:20PM +0200, Magne Mæhre wrote:
> Jeff Millar wrote:
> >
> > Some recent surfing turned up discussion of Orthogonal Frequency Division
> > Multiplex (OFDM). A form of spread spectrum that deals with multipath very
> > well...developed in Europe for wideband digital audio and digitial
> > television.
>
> OFDM is used for the Digital Audio Broadcasting service (DAB) in
> Europe (systems operational in UK, Sweden and Norway at least).
>
> Here in Norway they broadcast 6 national broadcasters on
> the same RF-channel all over the contry (same frequency on
> all transmitters). If I remember correctly it is an approx.
> 1.2 MHz channel, divided into 1536 (?) carriers. I don't have
> any details, but I guess you can find quite a bit of information
> on   http://www.etsi.org/ - who, unlike ITU, publishes its
> recommendations and standards on the web.
>
> --Magne / la1bfa

Interesting. I wasn't aware they were using OFDM for the audio system.

How well does it work? (do you own a receiver?) How expensive are
receivers? I'd like to hear more about this... OFDM, DMT, MCM, etc.
are also used in xDSL wireline systems.

As to the original post, I wouldn't call OFDM spread spectrum.
OFDM deals with multipath by allocating more bits to areas of the
spectrum which are cleaner (sort of a water-filling principle). DSSS
systems combat the problem by forcing the signal to consume more
spectrum than required. This 'redundancy' is then used to combat
multipath or narrowband interference.

    Cheers,
    Jake

--
   janovetz@uiuc.edu | Once you have flown, you will walk the earth with
 University of Illinois | your eyes turned skyward, for there you have been,
                        | there you long to return.   -- da Vinci
        PP-ASEL | http://www.ews.uiuc.edu/~janovetz/index.html

---
You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

7. [ss] Re: EME with spread spectrum?

From: "Jeff Millar" <jeff@wa1hco.mv.com>
Date: Mon, 4 Oct 1999 21:23:13 -0400
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-43309-1999.10.04-20.34.46--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

A comment or two embedded below.

jeff, wa1hco

----- Original Message -----
From: Jake Janovetz <janovetz@tempest.ece.uiuc.edu>
To: TAPR Spread Spectrum Special Interest Group <ss@lists.tapr.org>
Sent: Monday, October 04, 1999 10:22 AM
Subject: [ss] Re: EME with spread spectrum?

Interesting. I wasn't aware they were using OFDM for the audio system.
How well does it work? (do you own a receiver?) How expensive are
receivers? I'd like to hear more about this... OFDM, DMT, MCM, etc.
are also used in xDSL wireline systems.

As to the original post, I wouldn't call OFDM spread spectrum.
OFDM deals with multipath by allocating more bits to areas of the
spectrum which are cleaner (sort of a water-filling principle).

    A minor addition here...OFDM deals with intersymbol multipath
    because it transmits symbols slowly compared to multipath delays.
    On each carrier, the symbols dwell long enough for the reflections
    to pass before the value gets sampled at the receiver.

    You are correct that for RF multipath (that causes selective fading
    in spots of the bandwidth of the channel) the loss of a few carriers
    is compensated. Two approaches exist for compensation. DAB
    and DAB-T (european) use redundant coding of the data (forward
    error correction) to mask errors caused by degraded frequencies.
    Another more complex approach uses a duplex link and adapts to
    the channel by sending data about the quality of each FDM carrier
    back to the transmitter. This works well for HF links.

    Is also possible to space out the carriers. DAB/DAB-T pack in the
    individual OFDM carriers as close as possible. But consider a system
    that transmits many very narrow but widely spaced carriers whose
    frequencies have been choosen to fit the spectrum. Each carrier
    is very narrow and can only be detected by a very narrow band receiver,
    thus it's below noise for other systems on the spectrum. To recover
    the transmitted signal, the intercepting receiver would need to know
    all the transmitted frequencies. In other words, this is very much
    like spread spectrum. By selecting different transmitting frequencies
    within the same spectrum, channels can share the spectrum without
    interferring...just like CDMA.

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

8. [ss] Re: EME with spread spectrum?

From: Thomas Sailer <sailer@ife.ee.ethz.ch>
Date: Tue, 05 Oct 1999 13:34:17 +0200
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-43394-1999.10.05-06.45.57--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Jake Janovetz wrote:

> Interesting. I wasn't aware they were using OFDM for the audio system.
> How well does it work? (do you own a receiver?) How expensive are
> receivers? I'd like to hear more about this... OFDM, DMT, MCM, etc.
> are also used in xDSL wireline systems.

I do not personally own a receiver (there is no noteworthy DAB
transmission in my region), but there is a lot of activity
in southern germany and I know quite a few people there who
own DAB receivers.

Especially in hilly terrain DAB works very well, regions
that could not be well served by 100MHz WFM are now crystal
clear. The possibility for single frequency networks helps
frequency economy, and typically there are more but much
lower power DAB transmitters than FM. A typical DAB transmitter
has an output power of about 100W.

First generation car receivers were about 700 Euro, but
subsidized. They include a colour pixel display for "value added"
services like traffic maps.

Now Bosch has a DAB receiver module which you can buy
on a PCI card and soon on a USB device, no idea what it
costs though.

> OFDM deals with multipath by allocating more bits to areas of the
> spectrum which are cleaner (sort of a water-filling principle). DSSS

Not in a broadcast scenario, since the transmitter has no feedback
from its receivers and receivers have different paths.
The main mechanism to deal with multipath are the low symbol rate
and the guard interval.

Tom

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

9. [ss] DCC recap

From: Greg Jones <wd5ivd@tapr.org>
Date: Thu, 14 Oct 1999 13:03:39 -0500
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Cc: "HF SIG list   mailing"<hfsig@tapr.org>, " Spread Spectrum "<ss@tapr.org>,
        " TAPR/AMSAT DSP "<dsp@tapr.org>,
        "APRS SIG list   mailing"<aprssig@tapr.org>,
        "NETSIG list   mailing"<netsig@tapr.org>,
        "BBS SIG list   mailing"<bbssig@tapr.org>,
        " tacgps "<tacgps@tapr.org>, aprsnews@tapr.org, mic-e@tapr.org,
        TAPR Regional Freq <regional_freq@tapr.org>
Message-ID: <LYR6751-44935-1999.10.14-13.16.37--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

1999 ARRL and TAPR Digital Communications Conference
September 24-26, 1999
Phoenix, Arizona
Greg Jones, WD5IVD

Another grand Digital Communications Conference! Special thanks go out to
the workers at MARC for hosting locally and to PRUG for being our
international co-host again. Also, a very special thanks to Geoff Baehr,
N6LXA, Chief Network Officer of Sun Microsystems, for attending and giving
the dinner talk on Saturday.   Steve Stroh, N8GNJ, and Tina Stroh did an
excellent job in working the arrangements with the hotel in Phoenix once it
was selected. Tina wasn't able to attend because they are in the midst of

adopting a child. Congratualtions to Tina and Steve. Sheila Bible was a big help and will be working with Tina in the coming years to help coordinate the conferences as I take a lesser role in the conference. As in the past, audio and photos from the conference will be available on the TAPR web site (http://www.tapr.org/dcc).

Next year's DCC will be hosted in Orlando, FL. The date of the conference should be selected by the end of the year.

The conference started Friday afternoon with the third annual APRS National Symposium moderated by Steve Dimse, K4HG. The symposium was full of talks and projects. During the symposium yet another new mystery hardware project was discussed. This years was a sneak preview provided by Kenwood to all those attending the DCC of their new mobile APRS equipped radio. The following people spoke at the APRS Symposium.

APRSdos and TrakNet update
        Bob Bruninga, WB4APR
MacAPRS/WinAPRS Update
        Keith Sproul, WU2Z
XAPRS
        Keith Sproul, WU2Z
APRS+SA Update
        Brent Hildebrant, KH2Z
Internet and APRS
        Steve Dimse, K4HG
WinCE version
        Rob Wittner, KZ5RW
Kenwood TH-D7 Tricks, Treats, and Tragedies
        Stan Horzepa, WA1LOU
Arizona APRS
        David McCarthy, KC7AYX
APRS ICQ
        Tom Schaefer, NY4I
Microcontrollers and APRS
        Steve Bible, N7HPR
APRS Working Group Update
        John Ackermann, N8UR

The Friday Technical Seminar on HDTV by Allen Finne, KB5SQK was cancelled at the last minute when Allen cound not attend.

Friday night saw the annual DCC social, which was sponsored by PRUG. After the social, PRUG presented a technical paper highlighting their current development. The papers focused on what had been happening with their prototype direct-sequence radio operating in the 2.4 GHz band. This prototype appears to be very well designed from an experimentation point of view.

As with past years, Saturday was split into two strands -- a paper session and a session featuring selected topics. As in previous years, the selected topic strand had fewer topics with more time to present. Four selected topics were presented. Steve Bible, N7HPR, presented an introduction to PICs. Guy Story, KC5GOI, presented an overview to APRS and discussed some of the latest happenings in the mode. Johan Forrer, KC7WW, did an overview and current status on HF communications. Bob Nielsen, W6SWE, did a talk on the current status of Linux in the amateur community. Thanks to all the selected topic speakers for taking the time to present more in-depth materials during the DCC.

The paper sessions included the following talks:
Regulatory Issue and Update
        Dewayne Hendricks, WA8DZP
ARRL Technology Task Force & The Technology Working Group
        Rich Moseson, W2VU
Arizona Packet Radio, Past Present and Future
        Keith Justice, KF7TP & Dan Meredith, N7MRP
APRS Mic-Lite
        Bob Bruninga, WB4APR
APRS for X-Windows (Linux)
        Keith Sproul, WU2Z
Automatic Weather Bulletins via APRS
        Keith Sproul, WU2Z
APRS Generic Digipeating Satellites for HT and Mobile Satellite Communications
        Bob Bruninga, WB4APR
XML and APRS
        Steve Dimse, K4HG
APRN: Automatic Picture Relay Network and SSTV Picture Server

Keith Sproul, WU2Z & Bob Bruninga, WB4APR
APRS Stand Alone Message Receiver
Keith Sproul, WU2Z
Proposal for a Spread Spectrum Transponder Payload on the International
Space Station
Matthew Ettus, N2MJI
UWB (Ultra Wide Band) Technology
Dewayne Hendricks, WA8DZP
Status Report on TAPR 900MHz SS Radio Project
Tom McDermott, N5EG
A Low-Cost HF Channel Simulator for Testing and Evaluating HF Digital Systems
Johan Forrer, KC7WW
(Non Technical) Lessons to be learned from the PSK31 Phenomena
Eduardo Jacob, EA2BAJ
A software Implementation for Federal Standard 1052 (Mil. Std. 188-110A HF
Modems)
Robert McGwier, N4HY
A Practical Approach to Implementing HF Digital Voice in the Amateur Service
Charles Brain, G4GUO
HamWeb and HamStation
Dale Puckett, K0HYD

For the banquet speaker, we were very fortunate to have Geoff Baehr, N6LXA,
Chief Network Officer of Sun Microsystems. Geoff gave a very interesting
and thought-provoking talk on the future of the Internet and networking in
general and gave some comments on the future of amateur radio. We were
very fortunate to have Geoff attend the conference and much thanks goes to
Dewayne Hendricks, WA8DZP, for helping arrange another good banquet talk.

The Sunday morning seminar was a more time-intensive version of last year's
introductory session on PIC development. Steve Bible, N7HPR, Steve Dimse,
K4HG, John Hansen, W2FS, and Byon Garrabrant, N6BG gave a 5 hour long
seminar on PIC development and programming issues. They showed lots of
interesting projects and answered a lot of questions from the audience.

Thanks to all those that I missed mentioning who helped with the DCC and
I look forward to seeing you next year!

Tucson Amateur Packet Radio
8987-309 E Tanque Verde Rd #337 * Tucson, Az * 85749-9399
---
e-mail: tapr@tapr.org web: <http://www.tapr.org/>
ftp: ftp.tapr.org
phone: 940-383-0000 fax: 940-565-2544

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10. [ss] I recently visited your website - Intended For computer resellers and retailers

From: donr@lic-lemel.com (Don Rogers)
Date: Thu, 14 Oct 1999 14:06:44 -0700
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-44974-1999.10.14-17.38.45--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Hello. My name is Don Rogers. I recently visited your website, I have
something that might interest you. I represent a manufacture that
produces, cases, motherboards, modems, keyboards, mice, speakers. I
undestand that you build systems and purchase parts for retail. I would
like to expand business in your area. Please take a look at the items
that I manufacture. Pricing is below. Please email me if you have any
questions.

Macrex Macrex PS2 107 key Win 98 KEYBOARDS $3.50
Full Product Macrex AT 107 key Win 98 KEYBOARDS $3.50
Line Macrex Motorola V.90 PCI w/ Voice Retail Box $14.00
Macrex 3405 ATX Mid Case w/ 250 Watt PS $25.00
Macrex PS2 Mouse 3 button $2.00
Macrex Serial Mouse 3 button $2.00
Macrex 240 Watt Speakers 2pc $8.00
Macrex - 250W PS Case 3405 P/N $25.00
Macrex --- Screwless 900 Series w/ 250W PS $44.00
Macrex - Landmark ATX Patented 250 Watt Plastic Case $60.00
Macrex - Triumph ATX Patented 250 Watt Metal Case $46.00

UPS Battery Back UP Product

KOF - 330 330 VA UPS 6 Outlet - Powercom $59.00
KOF - 460 460 VA UPS 6 Outlet - Powercom $74.50
KIN - 525 525 VA Powercom w/ Software + Voltage Control $93.00
KIN - 625 625 VA UPS - Powercom w/ Software + Voltage Control $107.50
KIN - 800 800 VA UPS - Powercom w/ Software + Voltage Control $154.50
KIN - 1200 1200 VA UPS - Powercom w/ Software + Voltage Control
KIN - 1500 1500 VA UPS $236.00
KIN - 2200 2200 VA (Shortage) $368.00
SMK - 800 800 VA Smart Online UPS $286.00
SMK - 1000 1000 VA Smart Online UPS $341.00
SMK - 1500 1500 VA Smart Online UPS $462.00
SMK - 2000 2000 VA Smart Online UPS $572.00
SMK - 3000 3000 VA Smart Online UPS $924.00

Motherboards Lemel is the distributor for Superpower Motherboards
 Superpower Motherboards carry a 3 year Warranty

6XW Superpower 810E ATX   S370   5 PCI 0 ISA, AMR, AGP $95.00
6XV-133Mhz Superpower VIA 133 ATX Slot 1 3 PCI 2 ISA, AGP $65.00
7MW Superpower 810E MATX S370   3 PCI 0 ISA, AMR, AGP $95.00
7XW Superpower 810E ATX Slot 1   5 PCI 0 ISA, AMR Video, Sound
$95.00
5MSM Superpower SIS 530 Super7   4 PCI 3 ISA, Video, Sound
$73.00
586AB Superpower ALI AT   Super7   3 PCI 2 ISA, AGP Socket 7
$64.50

 Lemel International is a distributor of FIC Motherboards

VA 503+ FIC 503+   VIA MVP3 3 PCI 3 ISA, AGP, 2 DIMM, 4 SIMM $69.00

PA 2013 FIC PA2013 VIA MVP3 4 PCI 2 ISA, AGP, 3 DIMM, 4 SIMM 1MB C
$71.50
VB 601 FIC VB601 Intel 440BX 5 PCI 2 ISA, AGP, 4 DIMM, 1GB RAM, LDCM
$80.50
SD 11 FIC AMD 571 200Mhz BUS   5 PCI 1 ISA, AGP, 3 DIMM (768 SDRAM)
$145.00

~Don Rogers
donr@lic-lemel.com
Lemel International Corporation
(626) 913 - 8883 EXT 112
(626) 913 - 1495 FAX

This letter can not be considered spam as long as we include: Contact
information & remove instructions. This message is intended for
dealers/resellers only. If you have somehow gotten on this list in
error, or for any other reason would like to be removed, please reply
with "remove" in the subject line of your message. This message is
being sent to you in compliance with the Federal legislation for
commercial e-mail (H.R.4176 - SECTION 101Paragraph (e)(1)(A)) AND Bill
s.1618 TITLE III passed by the 105th U.S. Congress

 However, will not be responsible for the loss of sales you will incure
for not buying our products.

11. [ss] Re: I recently visited your website - Intended For computer resellers and retailers

From: Eric Glover <compuman@eecs.umich.edu>
Date: Thu, 14 Oct 1999 18:43:30 -0400 (EDT)
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-44976-1999.10.14-17.57.13--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Hey I was wondering if whoever can see the headers for this message can:

A: either forward to me, or
B: Contact their ISP and demand they shut this guys website down for
SPAMMING -- this is unsolicited commercial e-mail sent to a group, and
hence is often grounds for cancelation or removal of webhosting or other
services.

C: Also, maybe a little moderation -- automatic for all group members, and
manual for all else -- might be nice.

Thanks much,
Eric

Eric Glover -- compuman@eecs.umich.edu
Grad student hoping to finish before the end of 2000!

On Thu, 14 Oct 1999, Don Rogers wrote:

> Hello. My name is Don Rogers. I recently visited your website, I have
> something that might interest you. I represent a manufacture that
> produces, cases, motherboards, modems, keyboards, mice, speakers. I
> undestand that you build systems and purchase parts for retail. I would
> like to expand business in your area. Please take a look at the items
> that I manufacture. Pricing is below. Please email me if you have any
> questions.
>
> Macrex Macrex PS2 107 key Win 98 KEYBOARDS $3.50
> Full Product Macrex AT 107 key Win 98 KEYBOARDS $3.50
> Line Macrex Motorola V.90 PCI w/ Voice Retail Box $14.00
> Macrex 3405 ATX Mid Case w/ 250 Watt PS $25.00
> Macrex PS2 Mouse 3 button $2.00
> Macrex Serial Mouse 3 button $2.00
> Macrex 240 Watt Speakers 2pc $8.00
> Macrex - 250W PS Case 3405 P/N $25.00
> Macrex --- Screwless 900 Series w/ 250W PS $44.00
> Macrex - Landmark ATX Patented 250 Watt Plastic Case $60.00
> Macrex - Triumph ATX Patented 250 Watt Metal Case $46.00
>
> UPS Battery Back UP Product
>
> KOF - 330 330 VA UPS 6 Outlet - Powercom $59.00
> KOF - 460 460 VA UPS 6 Outlet - Powercom $74.50
> KIN - 525 525 VA Powercom w/ Software + Voltage Control $93.00
> KIN - 625 625 VA UPS - Powercom w/ Software + Voltage Control $107.50
> KIN - 800 800 VA UPS - Powercom w/ Software + Voltage Control $154.50
> KIN - 1200 1200 VA UPS - Powercom w/ Software + Voltage Control
> KIN - 1500 1500 VA UPS $236.00
> KIN - 2200 2200 VA (Shortage) $368.00
> SMK - 800 800 VA Smart Online UPS $286.00
> SMK - 1000 1000 VA Smart Online UPS $341.00
> SMK - 1500 1500 VA Smart Online UPS $462.00
> SMK - 2000 2000 VA Smart Online UPS $572.00
> SMK - 3000 3000 VA Smart Online UPS $924.00
>
> Motherboards Lemel is the distributor for Superpower Motherboards
> Superpower Motherboards carry a 3 year Warranty
>
> 6XW Superpower 810E ATX S370 5 PCI 0 ISA, AMR, AGP $95.00
> 6XV-133Mhz Superpower VIA 133 ATX Slot 1 3 PCI 2 ISA, AGP $65.00
> 7MW Superpower 810E MATX S370 3 PCI 0 ISA, AMR, AGP $95.00
> 7XW Superpower 810E ATX Slot 1 5 PCI 0 ISA, AMR Video, Sound
> $95.00
> 5MSM Superpower SIS 530 Super7 4 PCI 3 ISA, Video, Sound
> $73.00
> 586AB Superpower ALI AT Super7 3 PCI 2 ISA, AGP Socket 7
> $64.50
>
> Lemel International is a distributor of FIC Motherboards
>
> VA 503+ FIC 503+ VIA MVP3 3 PCI 3 ISA, AGP, 2 DIMM, 4 SIMM $69.00
>
> PA 2013 FIC PA2013 VIA MVP3 4 PCI 2 ISA, AGP, 3 DIMM, 4 SIMM 1MB C
> $71.50
> VB 601 FIC VB601 Intel 440BX 5 PCI 2 ISA, AGP, 4 DIMM, 1GB RAM, LDCM
> $80.50
> SD 11 FIC AMD 571 200Mhz BUS 5 PCI 1 ISA, AGP, 3 DIMM (768 SDRAM)
> $145.00
>
>
>
> ~Don Rogers
> donr@lic-lemel.com
> Lemel International Corporation
> (626) 913 - 8883 EXT 112
> (626) 913 - 1495 FAX
>
> This letter can not be considered spam as long as we include: Contact
> information & remove instructions. This message is intended for
> dealers/resellers only. If you have somehow gotten on this list in
> error, or for any other reason would like to be removed, please reply
> with "remove" in the subject line of your message. This message is

> being sent to you in compliance with the Federal legislation for
> commercial e-mail (H.R.4176 - SECTION 101Paragraph (e)(1)(A)) AND Bill
> s.1618 TITLE III passed by the 105th U.S. Congress
>
> However, will not be responsible for the loss of sales you will incure
> for not buying our products.
>

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12. [ss] Spam (Was: Re: I recently visited your website...)

From: Brett Glass <brett@lariat.org>
Date: Thu, 14 Oct 1999 17:50:13 -0600
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-44983-1999.10.14-19.02.30--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

This guy has been spamming every address in the known universe. We've seen
his spams come in on several "decoy" addresses we managed to get onto the
spammers' CDs. (Whenever mail comes for these addresses, we automatically
block e-mail from the sender.)

His ISP is netsol.net, and their address for abuse complaints is
abuse@netsol.net. You might also try support@netsol.net. If they get
enough complaints, they will hopefully act quickly.

--Brett

At 06:43 PM 10/14/1999 -0400, Eric Glover wrote:
>Hey I was wondering if whoever can see the headers for this message can:
>
>A: either forward to me, or
>B: Contact their ISP and demand they shut this guys website down for
>SPAMMING -- this is unsolicited commercial e-mail sent to a group, and
>hence is often grounds for cancelation or removal of webhosting or other
>services.
>
>C: Also, maybe a little moderation -- automatic for all group members, and
>manual for all else -- might be nice.
>
>Thanks much,
>Eric
>
>   Eric Glover -- compuman@eecs.umich.edu
>   Grad student hoping to finish before the end of 2000!

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

13. [ss] NDN: ss digest: October 14, 1999

From: Gateway@africaonline.co.ke (Gateway)
Date: 15 Oct 1999 08:20:46 GMT
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-45036-1999.10.15-00.31.10--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Sorry. Your message could not be delivered to:

NJUGUNA,AfricaOnline (The name was not found at the remote site. Check that
the name has been entered correctly.)

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To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

14. [ss] spread spectrum

From: "Van Bruwaene Remko" <van_bruwaene_remko@hotmail.com>
Date: Tue, 19 Oct 1999 15:49:9
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-45771-1999.10.19-16.01.28--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Woever can help with finding some more information about products with
Spread spectrum techniques, can always mail me at
van_bruwaene_remko@hotmail.com. I especially search for products for short
range, less of power use.

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

15. [ss] RE: spread spectrum

From: "Vazquez, Miguel" <Miguel.Vazquez@iusacell.com.mx>
Date: Tue, 19 Oct 1999 17:22:06 -0500
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-45779-1999.10.19-17.42.01--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Here is a pdf file with some comparatives of 802.11 compliant SS cards
         <<r2feat.pdf>>
[Attachment: r2feat.pdf; application/octet-stream; 20,940 bytes]

16. [ss] RE: spread spectrum

From: "Kent's BGA Account" <akent@bga.com>
Date: Tue, 19 Oct 1999 18:31:59 -0500
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-45789-1999.10.19-18.45.04--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

There was one left out of the PDF file, and it's the cheapest I've found,
that seems to work well.

It's the Webgear Aviator Pro. It's a 100mw 2.4 gig hopper (they claim to be
802.11 compliant). I bought the radios for around $119 each, and the access
points for $450 or so. These were bought from www.shopper.com . These work
really well, but only include Windows (95/98/NT) drivers. I think they get
the price so low by only making PCMCIA radios. Even the access point uses
the same PCMCIA radio (which is included with the AP). They have PCMCIA
adapter cards for desktops that cost around $39. I must say that I have not
looked up the prices in a couple of months. These prices may have gone up or
down.

The farthest computer, at my installation, from the access point is about
300 feet away, through two wooden walls and about 50 trees. The only time
there is a problem is during any large storm. The remote computer is a
desktop, using the PCMCIA adapter.

Just for fun one day, I fired up two signal generators (8640B's), attached
antennas to each, enabled a 1khz tone (FM and then AM), and cranked up the
power to +20db. These were placed within ten feet of the access point. I had
the farthest computer just copying files over and over from the network. I
watched for packet losses from the server. I moved each SG across the
spectrum slowly while watching on the SA (8570A). The radio on the far end
was barely visible on the SA. I saw only 28 packets dropped, out of many
thousands. I'm impressed.

I don't have anything to do with Webgear. I just like their radios.

Kent

----- Original Message -----
From: Vazquez, Miguel <Miguel.Vazquez@iusacell.com.mx>
To: TAPR Spread Spectrum Special Interest Group <ss@lists.tapr.org>
Sent: Tuesday, October 19, 1999 5:22 PM
Subject: [ss] RE: spread spectrum

> Here is a pdf file with some comparatives of 802.11 compliant SS cards
> <<r2feat.pdf>>
>

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17. [ss] RE: spread spectrum

From: "Ron Curry" <recurry@curry.org>
Date: Tue, 19 Oct 1999 18:27:04 -0700
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>

Message-ID: <LYR6751-45802-1999.10.19-20.39.17--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

The proxim symphony cards are not 802.11 compliant but they are $120 and are 2.4ghz 100mw frequency hopping. Proxim also has a 100mw standalone enet bridge for $350 and a 500mw bridge for around $600 (you have to call around to get that price).

Regards,
Ron
ke6wed

> -----Original Message-----
> From: bounce-ss-9706@lists.tapr.org
> [mailto:bounce-ss-9706@lists.tapr.org]On Behalf Of Vazquez, Miguel
> Sent: Tuesday, October 19, 1999 3:22 PM
> To: TAPR Spread Spectrum Special Interest Group
> Subject: [ss] RE: spread spectrum
>
>
> Here is a pdf file with some comparatives of 802.11 compliant SS cards
> <<r2feat.pdf>>
>

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

18. [ss] NDN: ss digest: October 19, 1999

From: Gateway@africaonline.co.ke (Gateway)
Date: 20 Oct 1999 08:21:11 GMT
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-45874-1999.10.20-00.31.23--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Sorry. Your message could not be delivered to:

NJUGUNA,AfricaOnline (The name was not found at the remote site. Check that the name has been entered correctly.)

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

19. [ss] Odp: spread spectrum

From: "Andrzej Podolski" <apodolski@ums.gov.pl>
Date: Wed, 20 Oct 1999 09:54:11 +0200
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-45888-1999.10.20-03.06.10--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

-----Wiadomość orginalna-----
Od: Van Bruwaene Remko <van_bruwaene_remko@hotmail.com>
Do: TAPR Spread Spectrum Special Interest Group
<ss@lists.tapr.org>
Data: 19 października 1999 22:48
Temat: [ss] spread spectrum

>Woever can help with finding some more information about
products with
>Spread spectrum techniques, can always mail me at
>van_bruwaene_remko@hotmail.com. I especially search for
products for short
>range, less of power use.

Hi
Try this
http://www.diamondmm.com/products/current/homefree.asp
BR

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

20. [ss] FHSS Radio Project Update

From: Greg Jones <wd5ivd@tapr.org>
Date: Sun, 24 Oct 1999 22:34:53 -0500
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-46528-1999.10.24-22.47.39--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

The FHSS web page has been updated.

http://www.tapr.org/tapr/html/Ftaprfhss.html

Cheers - Greg Jones, WD5IVD

Greg Jones, WD5IVD Austin, Texas
wd5ivd@tapr.org http://www.tapr.org/~wd5ivd

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

21. [ss] NDN: ss digest: October 24, 1999

From: Gateway@africaonline.co.ke (Gateway)
Date: 26 Oct 1999 15:59:44 GMT
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-46662-1999.10.26-10.22.11--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Sorry. Your message could not be delivered to:

NJUGUNA,AfricaOnline (The name was not found at the remote site. Check that
the name has been entered correctly.)

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

22. [ss] C:\CoolProgs\Pretty Park.exe

From: "Bob Parks" <bobparks@wired.com>
Date: Tue, 26 Oct 1999 23:43:57 -0500 (CDT)
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <199910270443.XAA04610@tapr.org>
Rendered body type: multipart/mixed

[No readable text body. See the preserved original monthly archive.]
[Inline non-text content: multipart/mixed; 860 bytes]

23. [ss] Re: C:\CoolProgs\Pretty Park.exe

From: Raghuraman <raghum@sasi.com>
Date: Wed, 27 Oct 1999 10:24:07 +0530 (IST)
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Cc: TAPR Spread Spectrum Special Interest Group <ss@lists.tapr.org>
Message-ID: <LYR6751-46806-1999.10.27-00.05.31--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

hi ,
The previous mail has a virus.
raghu

On Wed, 27 Oct 1999, Bob Parks wrote:

[NON-Text Body part not included]

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

24. [ss] Re: C:\CoolProgs\Pretty Park.exe

From: Derek Lassen <kn6td@clubnet.net>
Date: Tue, 26 Oct 1999 21:50:31 -0700
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-46807-1999.10.27-00.08.22--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Well, Duhh...
At 10:24 AM 10/27/99 +0530, you wrote:
>hi ,
>   The previous mail has a virus.
>raghu
>
>
>On Wed, 27 Oct 1999, Bob Parks wrote:
>
>
> [NON-Text Body part not included]
>
>
>---
>You are currently subscribed to ss as: KN6TD@CLUBNET.NET
>To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org
>

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

25. [ss] Watch out: PrettyPark macro virus on the list

From: Brett Glass <brett@lariat.org>
Date: Tue, 26 Oct 1999 22:57:22 -0600
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Cc: bobparks@wired.com, postmaster@wired.com
Message-ID: <LYR6751-46808-1999.10.27-00.10.12--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Our mail server's macro virus detector just went crazy; apparently a copy
of the PrettyPark macro virus -- or a file that looked like it -- came in
via this mailing list. The return address on the mail was
bobparks@wired.com, and the message body said

 > Test: Pretty Park.exe :)
 >
 >   Bob Parks

Of course, it could be that Bob Parks' account was hacked and is being used
to send the virus, or that this was some kind of sick joke and the file is
a dummy EXE. But *I*, for one, am certainly not going to run the EXE.

--Brett Glass

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

26. [ss] Re: Watch out: PrettyPark macro virus on the list

From: "Bob Parks" <bobparks@wired.com>
Date: Tue, 26 Oct 1999 22:12:01 -0500
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-46809-1999.10.27-00.16.53--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Yup. I got the note from a very close friend a few minutes ago and clicked
on it without thinking. I'm on a demo computer. Dumb, dumb, I know. Sorry
for the inconvenience.

Bob

----- Original Message -----
From: Brett Glass <brett@lariat.org>
To: <ss@lists.tapr.org>
Cc: <bobparks@wired.com>; <postmaster@wired.com>
Sent: Tuesday, October 26, 1999 11:57 PM
Subject: Watch out: PrettyPark macro virus on the list

> Our mail server's macro virus detector just went crazy; apparently a copy
> of the PrettyPark macro virus -- or a file that looked like it -- came in
> via this mailing list. The return address on the mail was
> bobparks@wired.com, and the message body said
>

> > Test: Pretty Park.exe :)
> >
> > Bob Parks
>
> Of course, it could be that Bob Parks' account was hacked and is being
used
> to send the virus, or that this was some kind of sick joke and the file is
> a dummy EXE. But *I*, for one, am certainly not going to run the EXE.
>
> --Brett Glass
>

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

27. [ss] Dumb Virus coming your way

From: "Bob Parks" <bobparks@wired.com>
Date: Tue, 26 Oct 1999 22:40:37 -0500
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-46812-1999.10.27-00.45.40--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Hi,

I just clicked on an attachment from a close friend, but it's one of those dumb virus worms. So don't
click on the attachment whatever you do. Sorry for the inconvenience.

Best,

Bob

28. [ss] Re: Dumb Virus coming your way

From: Jake Janovetz <janovetz@tempest.ece.uiuc.edu>
Date: Wed, 27 Oct 1999 08:49:07 -0500
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-46854-1999.10.27-09.01.37--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Ahhh. One of the many benefits of UNIX!

Cheers,
Jake

On Tue, Oct 26, 1999 at 10:40:37PM -0500, Bob Parks wrote:
> Hi,
>
> I just clicked on an attachment from a close friend, but it's one of those dumb virus worms. So don't
click on the attachment whatever you do. Sorry for the inconvenience.
>
> Best,
>
> Bob

--
janovetz@uiuc.edu | How can it be that mathematics, being after all a
University of Illinois | product of human thought independent of experience,
| is so admirably adapted to the objects of reality?
PP-ASEL | - Albert Einstein

Disclaimer: The policies of this University certainly do not reflect my
own opinions, objectives, or agenda.

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

29. [ss] Re: Dumb Virus coming your way

From: Brett Glass <brett@lariat.org>
Date: Wed, 27 Oct 1999 08:04:25 -0600
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-46855-1999.10.27-09.17.14--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

True: under UNIX one can't send macro viruses as easily. Skript kiddies can, however,
hide Trojan horses in your manual pages, and/or root, rape, and pillage via buffer

overflow exploits. Pine, the e-mail program for UNIX, has been known to have some
significant security holes.

Luckily, it's still harder to exploit a good UNIX than Windows or NT.

--Brett Glass

At 08:49 AM 10/27/1999 -0500, Jake Janovetz wrote:
>Ahhh. One of the many benefits of UNIX!
>
>   Cheers,
>   Jake
>
>
>On Tue, Oct 26, 1999 at 10:40:37PM -0500, Bob Parks wrote:
> > Hi,
> >
> > I just clicked on an attachment from a close friend, but it's one of those dumb virus worms. So
don't click on the attachment whatever you do. Sorry for the inconvenience.
> >
> > Best,
> >
> > Bob
>
>--
>   janovetz@uiuc.edu | How can it be that mathematics, being after all a
> University of Illinois | product of human thought independent of experience,
> | is so admirably adapted to the objects of reality?
>   PP-ASEL | - Albert Einstein
>
>Disclaimer: The policies of this University certainly do not reflect my
>   own opinions, objectives, or agenda.
>
>---
>You are currently subscribed to ss as: BRETT@LARIAT.ORG
>To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

---
You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

30. [ss] looking to expand my business.

From: donr@lic-lemel.com (Don Rogers)
Date: Thu, 28 Oct 1999 09:33:44
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-47083-1999.10.28-15.56.11--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Attn: Purchasing, CEO.

My name is Don Rogers. I understand that you are in the busniess
of selling computers. I work for a company called Cyber2000. we
are a based in Los Angeles, manufacturing an array of products
such as cases, motherboards, modems, keyboards, mouse, speakers,
and battery backups. Whether you are a distributor, reseller,
VAR, or retail store, i can lower the price on the items that
you are curremtly buying, and lengthen your payment term, while
not effecting the quality and the delivery of your items.

The Mission of our company is to offer a large veriety of product
exclusively to computer resellers, VAR's, Dealers, and System
Integrators in the United States. Being a manufacture for cases,
motheboards, modems, keyboards, mice, and speakers, Cyber2000 has
a distinct advantage of other companies who are brokering product
and attempting to appear as a manufacture. I have an aggressive
price, abundsant stock on hnd, and generous terms and serive
agreements to offer.

With four international locations in Miami, Toranto, Paraguay,
and Brazil, Cyber2000 has become a leading-edge distributor and
exporter to all regions of Canada, Mexico, and South America.
The driving force behind our continuing growth has been the
simple philoshophy to delivery superiour quality of product not
sacrificing the art of customer service.

Cyber2000 is a full-time hardware computer integrator for
resllers and VAR's at no extra charge. We are able to assure
compatibilty and quality assurance to all our customer who take

advantage of our free service.

Here is an example of our prices. All product can be shipped
FOB China, Hong Kong if purchased in Quanity. Otherwise, prices
are FOB Los Angeles.

ATX Case 250 Watt/UL Mid Tower 9 bay.	$ 27.00
ATX Case 250 Watt/UL Mini Tower 6 bay	$ 23.00
AT Case 250 Watt/UL Mini Tower 5 bay	$ 13.50
PSII KEYBOARD 107K WIN 98+	$ 4.00
AT KEYOBARD 107K WIN 98+	$ 4.00
PSII OR SERIAL MOUSE	$ 1.60
Motorola Modem PCI V.90 Retail Box spk/Mic	$ 14.50
USR 6729 PCI US ROBOTICS	$ 64.00
USR 1749 ISA USR	$ 65.50
VIA-133 ATX MB 133Mhz Bus. 3 year warranty	$ 65.00
ALI Super 7 MB 100Mhz Bus 3 year warranty	$ 59.00
SIS530 4MB Video AGP, + Sound ATX 3 year	$ 69.00
Intel 810 Slot 1 ATX	$ 79.00
Intel 810 S370 ATX	$ 78.00
Ram 32 MB PC 100	$ 46.00
Ram 64 MB PC 100	$ 74.50
Ram 128 MB PC 100	$ 150.00
Powercom Battery Backup 330VA 6 OUTLET	$ 57.50
Powercom Battery Backup 440VA 6 OUTLET	$ 71.50
Powercom Battery Backup 625VA	$ 93.50
Powercom Battery Backup 800VA	$ 148.50
Powercom Battery Backup 1000VA	$ 181.50
Powercom Battery Backup 1200VA	$ 206.00
Powercom Battery Backup 1500VA	$ 275.00

Thank you for your time.

Don Rogers
Cyber2000
Senoir Sales Account Coordinator
626-913-8883 EXT 112
626-913-1495 FAX
donr@lic-lemel.com
www.lic-lemel.com

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

31. [ss] RE: looking to expand my business.

From: "Mitchell, Ed" <Ed.Mitchell@West.Boeing.com>
Date: Thu, 28 Oct 1999 13:58:34 -0700
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-47087-1999.10.28-16.11.26--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I thought this guy was blocked, this is spam, we (I) don't need it. I don't
even like computers.

> -----Original Message-----

> From: donr@lic-lemel.com [SMTP:donr@lic-lemel.com]
> Sent: Thursday, October 28, 1999 2:34 AM
> To: TAPR Spread Spectrum Special Interest Group
> Subject: [ss] looking to expand my business.
>
> Attn: Purchasing, CEO.
>
> My name is Don Rogers. I understand that you are in the busniess
> of selling computers. I work for a company called Cyber2000. we
> are a based in Los Angeles, manufacturing an array of products
> such as cases, motherboards, modems, keyboards, mouse, speakers,
> and battery backups. Whether you are a distributor, reseller,
> VAR, or retail store, i can lower the price on the items that
> you are curremtly buying, and lengthen your payment term, while
> not effecting the quality and the delivery of your items.
>
> The Mission of our company is to offer a large veriety of product
> exclusively to computer resellers, VAR's, Dealers, and System
> Integrators in the United States. Being a manufacture for cases,
> motheboards, modems, keyboards, mice, and speakers, Cyber2000 has
> a distinct advantage of other companies who are brokering product
> and attempting to appear as a manufacture. I have an aggressive
> price, abundsant stock on hnd, and generous terms and serive
> agreements to offer.
>
> With four international locations in Miami, Toranto, Paraguay,
> and Brazil, Cyber2000 has become a leading-edge distributor and
> exporter to all regions of Canada, Mexico, and South America.
> The driving force behind our continuing growth has been the
> simple philoshophy to delivery superiour quality of product not
> sacrificing the art of customer service.
>
> Cyber2000 is a full-time hardware computer integrator for
> resllers and VAR's at no extra charge. We are able to assure
> compatibilty and quality assurance to all our customer who take
> advantage of our free service.
>
> Here is an example of our prices. All product can be shipped
> FOB China, Hong Kong if purchased in Quanity. Otherwise, prices
> are FOB Los Angeles.
>
>
>
> ATX Case 250 Watt/UL Mid Tower 9 bay. $ 27.00
> ATX Case 250 Watt/UL Mini Tower 6 bay $ 23.00
> AT Case 250 Watt/UL Mini Tower 5 bay $ 13.50
> PSII KEYBOARD 107K WIN 98+ $ 4.00
> AT KEYOBARD   107K WIN 98+ $ 4.00
> PSII OR SERIAL MOUSE $ 1.60
>
>
> Motorola Modem PCI V.90 Retail Box spk/Mic $ 14.50
> USR 6729 PCI US ROBOTICS $ 64.00
> USR 1749 ISA USR $ 65.50
>
> VIA-133 ATX MB 133Mhz Bus. 3 year warranty $ 65.00
> ALI Super 7 MB 100Mhz Bus 3 year warranty $ 59.00
> SIS530 4MB Video AGP, + Sound ATX 3 year $ 69.00
> Intel 810 Slot 1 ATX $ 79.00
> Intel 810 S370   ATX $ 78.00
>
> Ram 32 MB PC 100 $ 46.00
> Ram 64 MB PC 100 $ 74.50
> Ram 128 MB PC 100 $ 150.00
>
> Powercom Battery Backup 330VA 6 OUTLET $ 57.50
> Powercom Battery Backup 440VA 6 OUTLET $ 71.50
> Powercom Battery Backup 625VA $ 93.50
> Powercom Battery Backup 800VA $ 148.50
> Powercom Battery Backup 1000VA $ 181.50
> Powercom Battery Backup 1200VA $ 206.00
> Powercom Battery Backup 1500VA $ 275.00
>
>
>
> Thank you for your time.
>
>
> Don Rogers

> Cyber2000
> Senoir Sales Account Coordinator
> 626-913-8883 EXT 112
> 626-913-1495 FAX
> donr@lic-lemel.com
> www.lic-lemel.com
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> ---
> You are currently subscribed to ss as: ED.MITCHELL@BOEING.COM
> To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

---
You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

32. [ss] Re: looking to expand my business.

From: Jay Melvin <jmelvin@infopath.com>
Date: Thu, 28 Oct 1999 16:23:51 -0700
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-47101-1999.10.28-18.36.52--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Sir,
   Please cease spaming this user group.
Thanks, - Jay Melvin, jmelvin@infopath.com

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

33. [ss] Re: looking to expand my business.

From: Brett Glass <brett@lariat.org>
Date: Thu, 28 Oct 1999 22:05:34 -0600
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Cc: jmelvin@infopath.com
Message-ID: <LYR6751-47129-1999.10.28-23.18.37--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Mailing the spammer won't help; mailing his ISP might.

The correct addresses for complaints are:

abuse@netsol.net
support@netsol.net
sales@netsol.net
abuse@psi.net
(Note: netsol.net did not respond to my complaints, so
  it may be necessary to go to PSI, their upstream provider.)

Include a copy of the spam and indicate that it came from
"lic-lemel.com" (AKA "cyberexinc.com"). The originating
IP addresses were 38.187.68.2 and 38.187.68.3, according to
our logs. Note that this was the second spam this company has
sent to the list (as well as many other victims) this month.

--Brett Glass

At 04:23 PM 10/28/1999 -0700, Jay Melvin wrote:
>Sir,
>   Please cease spaming this user group.
>Thanks, - Jay Melvin, jmelvin@infopath.com

You are currently subscribed to ss as: lyris.ss@tapr.org

To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

November 1999

Original source file: ss.9911
Source: http://ftp.tapr.org/tapr_history/SIG_Archives/spread-spectrum-sig/mail_archive/ss.9911

1. [ss] UWB History

From: Dewayne Hendricks <dewayne@warpspeed.com>
Date: Mon, 1 Nov 1999 07:36:26 -0800
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-47672-1999.11.01-09.49.38--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

[Note: This comes from another list I'm on but I decided to post it here because I thought that it would be of general interest. Dewayne, WA8DZP]

For an introduction to the history of ultra wideband communications, please see <http://www.multispectral.com/history.html>. Included is an interesting article written by Dr. Gerald F. Ross on the "Early Motivations and History of UWB Technology." Dr. Ross is currently President of Anro Engineering, Inc. and is one of the original inventors in the UWB field, with fundamental research and development efforts dating back to the 1950's. Dr. Ross is a Fellow of the IEEE and Member of the National Academy of Engineering, both honors awarded for his pioneering work in the field of time domain electromagnetics and ultra wideband technology.

Source: FCC Notice of Inquiry / Ultra-Wideband Working Group mailing list

---
You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

2. [ss] Re: UWB History

From: "Wayne Harrell" <wharrell@surfsouth.com>
Date: Mon, 1 Nov 1999 18:28:55 -0500
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-47750-1999.11.01-17.38.29--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Since many of us use e-mail for business and to keep up with friends and family,
I thought you'd like to know the following. Please jump on it right away and
forward this to others. CNN has reported that within the next two weeks Congress
is going to vote on allowing telephone companies to CHARGE A TOLL FEE for Internet
access. Translation: Every time we send long distance e-mail we will receive
a long distance charge. This will get costly. Please visit the following web
site and file a complaint. Complain to your Congressperson. We can't allow this
to pass The following address will allow you to send an e-mail on this subject
DIRECTLY to your Congressperson.

http://www.house.gov/writerep

Pass this on to your friends. It is urgent! I hope all of you will pass this
on to all your friends and family. We should ALL have an interest in this one.
WAIT, THERE'S MORE. IN ADDITION, The last few months have revealed an alarming
trend in the Government of the United States attempting to quietly push through
legislation that will affect your use of the Internet. Under proposed legislation
the U.S. Postal Service will be attempting to bilk email users out of "alternate
postage fees".

Bill 602P will permit the Federal Govt to charge a 5 cent surcharge on every
email delivered, by billing Internet Service Providers at source. The consumer
would then be billed in turn by the ISP. Washington D.C. lawyer Richard Stepp

is working without pay to prevent this legislation from becoming law. The U.S.
Postal Service is claiming that lost revenue due to the proliferation of email
is costing nearly $230,000,000 in revenue per year. You may have noticed their
recent ad campaign "There is nothing like a letter". Since the average citizen
received about 10 pieces of email per day in 1998, the cost to the typical individual
would be an additional 50 cents per day, or over $180 dollars Per year, above
and beyond there regular Internet costs.

Note that this would be money paid directly to the U.S. Postal Service for a
service they do not even provide. The whole point of the Internet is democracy
and non-interference. If the federal government is permitted to tamper with
our liberties by adding a surcharge to email, who knows Where it will end. You
are already paying an exorbitant price for snail mail because of bureaucratic
inefficiency. It currently takes up to 6 days for a letter to be delivered from
New York to Buffalo. If

The U.S. Postal Service is allowed to tinker with email; it will mark the end
of the "free" Internet in the United States. One congressman, Tony Schnell
® has even suggested a "twenty to forty dollar per month surcharge on all internet
service" above and beyond the government's proposed email Charges. Note that
most of the major newspapers have ignored the story, the only exception being
the Washingtonian which called the idea of email surcharge "a useful concept
who's time has come" (March 6th, 1999) Editorial. Don't sit by and watch your
freedoms erode away! Send this e-mail to EVERYONE on your list, and tell all
your friends and relatives to write to their congressman and say "No!" to Bill
602P.

It will only take a few moments of your time, and could very well be instrumental
in killing a bill we don't want.

PASS THIS ON TO EVERYONE YOU KNOW WHO USES EMAIL REMEMBER THESE ARE TWO SEPARATE
ISSUES THAT EFFECT ALL OF US ONLINE LET YOUR VOICE BE HEARD NOW, NOT AFTER

Regards,
Wayne Harrell WD4LYV

Please forward to any sigs you are a part of and contact the web site below.>

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

3. [ss] com chip seen on slashdot

From: "Eric S. Johansson" <esj@harvee.billerica.ma.us>
Date: Mon, 01 Nov 1999 18:29:15 -0500
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-47751-1999.11.01-17.42.15--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

One Chip For All Your Wireless Needs

Posted by Hemos on 12:37 PM November 1st, 1999 EST
from the i-want-one-my-head dept.
shaar writes "Motorola has introduced another neat wireless chip. It seems
this new chip would get us all closer to the all-in-one gadget no matter
where you are. From the press release blurb: 'The chip conforms to the
Code-Division Multiple Access (CDMA), Global System for Mobile

Communications (GSM), Integrated Digital Enhanced Network (iDEN), and Time
Division Multiple Access (TDMA) standards and also supports satellite-based
products.' "

http://slashdot.org/article.pl?sid=99/11/01/1038209&mode=flat

any use for ham networks?

--- eric (ka1eec)

Eric S Johansson   esj@inguide.com   esj@harvee.billerica.ma.us
This message was composed using NaturallySpeaking.

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4. [ss] Re: UWB History

From: "Scott C. Best" <sbest00@svpal.org>
Date: Mon, 1 Nov 1999 17:19:38 -0800 (PST)
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-47757-1999.11.01-19.32.36--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Wayne:

On Mon, 1 Nov 1999, Wayne Harrell wrote:
> Since many of us use e-mail for business and to keep up with friends...
> family, I thought you'd like to know the following. Please jump on it
> right away and forward this to others.
                  ^^^^^^^^^^^^^^^^^^^^^^

        Please take special note of that phrase. Next time you
see it in an email, head quickly to:

        www.autodream.com/chain/
or   chainletters.org/

        Both have pretty thorough collections of every email hoax
ever sent. Reading it there first might make you reconsider.
        Although...heh...it is kinda funny to think that you
replied to Dewayne's email about UWB with a chain letter. Somehow
I don't imagine that the historical accounting of carrier-less
transmission ever got forwarded a few hundred thousand times...
Maybe you shoulda updated it to a "Congress announces a new fee
on UWB transmission; tell everyone you know!". Far more relevant. :)

-Scott

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5. [ss] Bandwidth from thin air

From: Dewayne Hendricks <dewayne@warpspeed.com>
Date: Mon, 8 Nov 1999 14:09:49 -0800
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-48513-1999.11.08-16.23.26--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

There is an interesting article on UWB technology and
Lucent's BLAST (Bell Labs Layered Space-Time) technology in the most
recent edition of the 'The Economist'. The article contrasts the two
technologies and talks about how they can be used to deliver wireless
bandwidth. Its available for free browsing on their website at:

   <http://www.economist.com/editorial/freeforall/current/index_st6388.html>

-- Dewayne

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6. [ss] Re: Bandwidth from thin air

From: Brett Glass <brett@lariat.org>
Date: Mon, 08 Nov 1999 15:59:10 -0700
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-48516-1999.11.08-17.12.34--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Lately, Lucent has trumpeted a bunch of wild ideas about wireless -- including one
scheme involving light rather than radio waves. But can they execute and deliver?

Of late, I have had much trouble even talking to Lucent about existing products, such as
their WaveLAN gear. No matter what your question, all they'll say is, "Go talk to a
distributor." But the distributors are untrained and technically unknowledgeable, and
so can't answer even the most basic technical question. Instead, they subtract
value from the product while pocketing a big markup.

I therefore do not think that any Lucent announcement should be taken too seriously.
The company does not seem to have any idea how to market, deal with engineers, or
deal with end users.

--Brett Glass

At 02:09 PM 11/8/1999 -0800, Dewayne Hendricks wrote:

>   There is an interesting article on UWB technology and Lucent's BLAST (Bell Labs Layered
Space-Time) technology in the most recent edition of the 'The Economist'. The article contrasts the two
 technologies and talks about how they can be used to deliver wireless bandwidth. Its available for
free browsing on their website at:
>
>   <http://www.economist.com/editorial/freeforall/current/index_st6388.html>
>
>-- Dewayne
>
>---
>You are currently subscribed to ss as: BRETT@LARIAT.ORG
>To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

---
You are currently subscribed to ss as: lyris.ss@tapr.org
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7. [ss] Re: Coding to beat turbo codes.

From: "Hamoperator SM7UGT Marcel bos" <sm1ugt@hotmail.com>
Date: Tue, 09 Nov 1999 15:41:37 PST
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-48649-1999.11.09-17.54.59--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

In order to read Postscript you need gostscript for PC.. Exact and
uncomersial!

>From: Brett Glass <brett@lariat.org>
>Reply-To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
>To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
>CC: janovetz@uiuc.edu
>Subject: [ss] Re: Coding to beat turbo codes.
>Date: Thu, 06 May 1999 09:34:53 -0600
>MIME-Version: 1.0
>From bounce-ss-4919@lists.tapr.org Thu May 06 08:35:18 1999
>Received: from [204.17.217.24] by hotmail.com (1.5) with SMTP id
>MHotMailB8FB01AF0113D1B98331CC11D9180D430; Thu May 06 08:35:18 1999
>Return-Path: <brett@lariat.org>
>Message-Id:
><LYR4919-19437-1999.05.06-10.39.40--SM1UGT#HOTMAIL.COM@lists.tapr.org>
>X-Sender: brett@localhost
>In-Reply-To: <LYR4769-19427-1999.05.06-08.51.25--BRETT#LARIAT.ORG@lists.
>tapr.org>
>List-Unsubscribe: <mailto:leave-ss-6751T@lists.tapr.org>
>List-Software: Lyris Server version 3.0
>List-Subscribe: <mailto:subscribe-ss@lists.tapr.org>
>List-Owner: <mailto:owner-ss@lists.tapr.org>
>X-List-Host: Tucson Amateur Packet Radio <http://www.tapr.org>
>X-Message-Id: <4.2.0.37.19990506093222.044944e0@localhost>
>Sender: bounce-ss-4919@lists.tapr.org
>Precedence: bulk
>
>Why, oh why do people persist in posting papers in PostScript? The only way
>many people can read this proprietary format online is in a graphics

>program. Is the paper available in HTML or another non-proprietary, easily
>readable format?
>
>--Brett Glass
>
>At 08:42 AM 5/6/99 -0500, Jake Janovetz wrote:
>>http://cm.bell-labs.com/who/{ruediger or tjr}/pub.html
>
>
>---
>You are currently subscribed to ss as: SM1UGT@HOTMAIL.COM
>To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org
>

_____
Get Your Private, Free Email at http://www.hotmail.com

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To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

8. [ss] Re: Bandwidth from thin air

From: "W. Hulse" <w5ni@swbell.net>
Date: Tue, 09 Nov 1999 22:07:22 -0600
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-48704-1999.11.09-22.21.41--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

What bugs me about that article is that I haven't figured out how they keep
six insects sitting still, without waving their antennae around and causing
phase shifts. If they would use conventional antennas, maybe they would
have better luck. Must have been a newcomer who wrote the article, a
biologist maybe. 73, Bill

-----Original Message-----
From: Brett Glass <brett@lariat.org>
To: TAPR Spread Spectrum Special Interest Group <ss@lists.tapr.org>
Date: Monday, November 08, 1999 5:01 PM
Subject: [ss] Re: Bandwidth from thin air

>Lately, Lucent has trumpeted a bunch of wild ideas about wireless --
including one
>scheme involving light rather than radio waves. But can they execute and
deliver?
>
>Of late, I have had much trouble even talking to Lucent about existing
products, such as
>their WaveLAN gear. No matter what your question, all they'll say is, "Go
talk to a
>distributor." But the distributors are untrained and technically
unknowledgeable, and
>so can't answer even the most basic technical question. Instead, they
subtract
>value from the product while pocketing a big markup.
>
>I therefore do not think that any Lucent announcement should be taken too
seriously.
>The company does not seem to have any idea how to market, deal with
engineers, or
>deal with end users.
>
>--Brett Glass
>
>At 02:09 PM 11/8/1999 -0800, Dewayne Hendricks wrote:
>
>>   There is an interesting article on UWB technology and Lucent's
BLAST (Bell Labs Layered Space-Time) technology in the most recent edition
of the 'The Economist'. The article contrasts the two technologies and
talks about how they can be used to deliver wireless bandwidth. Its
available for free browsing on their website at:
>>
>>
<http://www.economist.com/editorial/freeforall/current/index_st6388.html>
>>
>>-- Dewayne
>>
>>---
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>
>
>---
>You are currently subscribed to ss as: W5NI@SWBELL.NET
>To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org
>

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9. [ss] Re: Coding to beat turbo codes.

From: Brett Glass <brett@lariat.org>
Date: Wed, 10 Nov 1999 10:18:22 -0700
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-48813-1999.11.10-16.15.37--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

At 03:41 PM 11/9/1999 -0800, Hamoperator SM7UGT Marcel bos wrote:

>In order to read Postscript you need gostscript for PC.. Exact and uncomersial!

GhostScript is GPLed software. The purpose of the GPL is to destroy programmers' livelihoods as well as markets for commercial software. As commercial software developers, we believe that programmers should be compensated for their work and that open source should be a positive force and should be available for use by all. Its use must not be denied to developers of commercial software (as the GPL does) or used as a weapon to enforce a destructive agenda. We therefore avoid the use of GPLed software, and advocate that it not be used whenever possible.

--Brett Glass

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10. [ss] Building System ??

From: Bagus <bagus@risti.telkom.co.id>
Date: Thu, 11 Nov 1999 09:28:36 -0800
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-48840-1999.11.10-20.40.14--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Does anyone could inform to me,
How to build a transmission system for data with spread spectum radio system? May be some description about the circuits and everything that important to design for.

Thank you,

Bagus
a new comer of the list.


```
begin 600 WINMAIL.DAT
M>)\^(B<1`0:0" `$```````!``$``0>0!@`(````Y 0```````#H``$(@ <`
M& ```$E032Y-:6-R;W-O9G0@36%I;"Y.;W1E`#$(`0V ! `"`````@`"``$$
MD 8`] $```$````0`````P``, (````+``\.``````(!_P\!````6P``````
M``"!*Q^DOJ,0&9UN`-T!#U0"`````%1!4%(@4W!R96%D(%-P96-T<G5M(%-P
M96-I86P@26YT97)E<W0@1W)O=7 `4TU44 !S<T!L:7-T<RYT87!R+F]R9P``
M'@`", $````%````4TU44 `````>``,P`0```!(```!S<T!L:7-T<RYT87!R
M+F]R9P````,`%0P!`````P#^#P8````>``$P`0```"X````G5$%04B!3<')E
M860@4W!E8W1R=6T@4W!E8VEA;"!);G1E<F5S="!'<F]U<"<`````"``0LP`0``
M`!<```!33510.E-30$Q)4U13+E1!4%(N3U)'```#```Y``````L`0#H!````
M'@#HV7P$````L````5$%04B!3<')E860@4W!E8W1R=6T@4W!E8VEA;"!);G1E
M<F5S="!'<F]U< `"`?=?`0```%L``````````@2L?I+ZC$!F=;@#=`0]4`@``
M``!405!2(%-P<F5A9"!3<&5C=')U;2!3<&5C:6%L($EN=&5R97-T($=R;W5P
M`%--5% `<W- ;&ES=',N=&%P<BYO<F<```,`_5\!`````P#_7P`````"`?8/
M`0````0`````````"170!!( !`!,```!"=6EL9&EN9R!3>7-T96T@/S\`<08!
M!8 #``X```#/!PL`"P`)`!P`) `$`#D!`2" `P`.````SP<+``L`"0`6``H`
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M`"$''0.0!@`P" ``(0````L``@`!````"P`C```````#`"8```````L`*0``
M`````P`N```````#`#8`````$ `.0! .I O:BR_`1X`< `!````$P```$)U
M:6QD:6YG(%-Y<W1E;2 _/P```@%Q``$`````6`````;\L:B]_7^Y@-I@1$=.\
M@0`@K];<1@``'@`>#  $````#````15@``!X`'PP!````+ ```"]O/51%3$M/
```

```
M32]O=3U225-422]C;CU296-I<&EE;G1S+V-N/51U8F%G=7,``P`&$"AD$; #
M``<0Q ```!X`"! !````90```$1/15-!3EE/3D5#3U5,1$E.1D]2351/344L
M2$]75$]"54E,1$%44D%.4TU)4U-)3TY365-414U&3U)$051!5TE42%-04D5!
M1%-014-454U2041)3U-94U1%33]-05E"15-/344``````@$)$ $````+!0``
M!P4``+@+``!,6D9UU$,X'P,`"@!R8W!G,3(U<C(,8&,Q`S !!PM@;I$.$# S
M,P\69F4/DD\!]P*D`V,"`&-H"L!SA&5T`M%P<G$R``"2*@JA;F\24" P`="%
M`= V#Z P-3 T%"'S`= 4$#1]!VT"@P!0`]3[$?\3"V(3X110$[(8]!30KP<3
M`H "D0CF.PEO,!K?^F4.,#4<"ATA'-\=Z1OT_QX2''\@3R -'X\=OQP/$&#\
M,C@EVB;Q)J\GN1OT)^*_)D\J'RG=*5\GCRM4.0Y0'RZD, $H(S ``H)S='GJ
M; >0: G@= ``$U #\%!D8W1L"K%<,EAAF&1J=3%P!1!G: 5".Q8R# %C"< R
M8 ,P<VY\97@7, >P!; `P )S<[$`4'-B,A10,6!A$_#T7&L)X' +D#(_,J,(
M8.LRD N 93&@=CE@`4 SF[\,,#1D* `W0 2@"X!G)_'I-.9B81<09 (@-: U
M1N<QT#.0.Y$@,3$S#E VG_\WKSB_`%$Y_ "@-&X\?SV&_S$D#\ ^CS^?0*\.
M4#GO0P_;1!\]LS,"@A,08S9@2Z&3,Y ]L'1I.9 @1 $0J&%U; 5 4 K 80G
MX&%P:"!&`B$V)"5 Z&9I+0^0. % .3!0,^M'#S*C8@L@<@E04E(6H-E24G<T
M)4$7`' !T$UR?S._2I]+ID_03I %$ (P+4-/, -A.B!4;U>P4RAU8FH%D'17
ML$1AZ'1E.C8D-D__40]2'_]3+U0Y,< ]HPXA2Z$ZM@Y0FU5O5GY2.8$7`2!(
M/9'[!) V)#=9;UI_6X]<G3D/+UV_#Y!I< C08@JP=#C_2?H/5$807[]@QFH`
M8= +4+QY+T] 7+ +$6)%<S8D_R@`8S]D3V5?7*]43VM?;&_O;757TE=T6*DY
M;[\S/P,P'6FS.7.?=*]ZH$1O8_YU!X ", 703P`:`7C2>##W>'!Q40& ;E@P
M`& )\$V@[WT``@$UX%Y290#P?0`Q@))P'H!<=@B0=VL+@/YD:T" H@3P!T 0
M80% #@#O<2(]@H(%`A!O!4(7(1+R#5C ;0M16, @0SI<ZEQ7`&].X6U/, ,0
M!Y!-A+!-#> #8'-O`8 @KD\!( W@?_!<AF9%`,#U`Q N2W!T?= 7$'AP-2'=
M9W)X1C&((DXT8P,@$O/S`( %D&QV0:%&T YP->#_B@(!D `@BI* \7U!`<&*
M`3\6X ]P``!&T S0`9 @+O\:$HGX#E"*LDYP>,"++XP_?XU/#\!&T 6!CN^/
M_Y$/;+MK0$;0;(ZODV^4=2F-?(\E0))/ER^49&(@* *1_YA/BD-94)7_FK^;
MSYS?BG#_8Q">(HK_GX^@GXU\* ">+_^CKZ2_I<^*<'@`HJ^H/ZE/OZI4"OD#
M,'@O>3]ZS7M\\/L'D0!P>0(@$X %H$Y@-2!#"X!_<B!T;R '@"R:( J%2+ `
MM))B=0,0KS4@E,"QH !Q;00!:0(@6"!S>3%PA! @?W$@[F18L)3 `_!T3R!R
M@!KP[[%0N(%847T@($[ /;"TL/6W1#]]<7FUX!. AA '@/^WX >0!0.W`@&@
M9T&TD#'0^;/ :7)]$$W LT(U(&'B_GFX8#W"N&!8L+0@A" )$7\`<+PAM+"[
M(;' `Z!_<2Y+"H4*A524$6L@LX!U^BR_W$).T+& "H64P#5@_P?@!: '@ 7
MAB"\,V=P,7"?O\:O%*_?L.\%0'L@QY 1Q'9]``#(< `#`! 0``````,`$1 !
M`````P" $/____] ``<P8,*U26DLOP% ``@P8,*U26DLOP$#``" "" &````
M``# ````````1@````0A0````````,``8 (( 8``````, ```````!&````
M`%*%``"W#0``'@`"@ @@!@`````P ```````$8`````5(4```$````$````
M."XP``,``X (( 8``````, ```````!&``````&%`````````"P`$@ @@!@``
M````P ```````$8``````X4````````+``6 "" &``````# ````````1@``
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M@ @@!@``````P ```````$8`````&(4````````>``B "" &``````# ````
M````1@`````VA0```0````$`````````'@`)@ @@!@``````P ```````$8`
M````-X4```$````!`````````!X`"H (( 8``````, ```````!&`````#B%
H```!`````0`````````>`#T``0````$``````````P`--/TW``!/4@``
`
end


---
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To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org
```

11. [ss] Re: Coding to beat turbo codes.

From: "Jeff Millar" <jeff@wa1hco.mv.com>
Date: Wed, 10 Nov 1999 21:19:41 -0500
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-48841-1999.11.10-20.42.16--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

----- Original Message -----
From: Brett Glass <brett@lariat.org>
To: TAPR Spread Spectrum Special Interest Group <ss@lists.tapr.org>
Sent: Wednesday, November 10, 1999 12:18 PM
Subject: [ss] Re: Coding to beat turbo codes.

>>>off topic political diatribe deleted<<<

> We therefore
> avoid the use of GPLed software, and advocate that it not be used whenever
> possible.
>
> --Brett Glass

Who's "We" in this context? I didn't know of any organizations of that
type.

jeff

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

12. [ss] Re: Coding to beat turbo codes.

From: Brett Glass <brett@lariat.org>
Date: Wed, 10 Nov 1999 20:45:52 -0700
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-48842-1999.11.10-21.59.19--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

At 09:19 PM 11/10/1999 -0500, Jeff Millar wrote:

> > We therefore
> > avoid the use of GPLed software, and advocate that it not be used whenever
> > possible.
> >
> > --Brett Glass
>
>
>Who's "We" in this context?

Our company and its several affiliates, as well as quite a number of others.

The matter goes beyond politics, by the way. The GPL is "monkey wrenching,"
plain and simple -- an attempt to sabotage businesses.

--Brett

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

13. [ss] Re: Coding to beat turbo codes.

From: Jake Janovetz <janovetz@tempest.ece.uiuc.edu>
Date: Wed, 10 Nov 1999 22:05:54 -0600
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-48848-1999.11.10-22.19.57--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

> >Who's "We" in this context?
>
> Our company and its several affiliates, as well as quite a number of others.
>
> The matter goes beyond politics, by the way. The GPL is "monkey wrenching,"
> plain and simple -- an attempt to sabotage businesses.
>
> --Brett

Hmm.. Not me. I've released a thing or two under GPL and it is
for the simple reason that I don't want to sell the shit. I had
fun doing it, but I'd like to stay out of the rest of the crap that
goes along with selling something and move on.

Why not public domain then? Well, again, for the simple reason
that I don't think anyone else has the right to profit from my work.
If I want to profit that's my own choice, but I don't want to give
someone else the right to profit from it.

   Cheers,
   Jake

--
   janovetz@uiuc.edu | How can it be that mathematics, being after all a
 University of Illinois | product of human thought independent of experience,
                        | is so admirably adapted to the objects of reality?
        PP-ASEL | - Albert Einstein

Disclaimer: The policies of this University certainly do not reflect my
            own opinions, objectives, or agenda.

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

14. [ss] Re: Coding to beat turbo codes.

From: Jeff King <jeff@aerodata.net>
Date: Thu, 11 Nov 1999 00:35:05 -0500
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-48863-1999.11.10-23.46.46--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Jake Janovetz wrote:

> > The matter goes beyond politics, by the way. The GPL is "monkey wrenching,"
> > plain and simple -- an attempt to sabotage businesses.
> >
> > --Brett

> Why not public domain then? Well, again, for the simple reason
> that I don't think anyone else has the right to profit from my work.
> If I want to profit that's my own choice, but I don't want to give
> someone else the right to profit from it.

Maybe you didn't understand what Brett meant then. Its basically exactly
what you are saying..... denying others the ability to profit from your
work.... i.e. "Monkey wrenching".

-Jeff

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

15. [ss] Re: Coding to beat turbo codes.

From: Robert McGwier <rwmcgwier@home.com>
Date: Thu, 11 Nov 1999 02:11:49 -0500
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-48890-1999.11.11-01.25.58--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

What do any of these religious software wars have to do with
spread spectrum? This is definitely off topic.

At 08:45 PM 11/10/1999 -0700, you wrote:
>At 09:19 PM 11/10/1999 -0500, Jeff Millar wrote:
>
>> > We therefore
>> > avoid the use of GPLed software, and advocate that it not be used whenever
>> > possible.
>> >
>> > --Brett Glass
>>
>>
>>Who's "We" in this context?
>
>Our company and its several affiliates, as well as quite a number of others.
>
>The matter goes beyond politics, by the way. The GPL is "monkey wrenching,"
>plain and simple -- an attempt to sabotage businesses.
>
>--Brett
>
>
>---
>You are currently subscribed to ss as: RWMCGWIER@HOME.COM
>To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

---
You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

16. [ss] Re: Coding to beat turbo codes.

From: "Eric S. Johansson" <esj@harvee.billerica.ma.us>
Date: Thu, 11 Nov 1999 08:03:03 -0500
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-48928-1999.11.11-07.16.30--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

At 02:11 AM 11/11/1999 , Robert McGwier wrote:
>What do any of these religious software wars have to do with

>spread spectrum? This is definitely off topic.

you really hit the nail on the head! Irrational avoidance of the GPL or
any discussion thereof should be taken to the gnu newsgroups. for a better
understanding of what the GPL really is about, I suggest folks read the
document for themselves. You can find more information at
http://www.gnu.org. If you want to read more of Bretts arguments you can
find them at: http://www.cptech.org/altos/brett.html

If you want my opinions on the GPL and why it is a fundamentally positive
change for the software industry, you can write me at: esj@inguide.com

I will spare others on the list any further rants.
Eric S Johansson   esj@inguide.com   esj@harvee.billerica.ma.us
This message was composed using NaturallySpeaking.

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

17. [ss] anything more to this than hype?

From: "Eric S. Johansson" <esj@harvee.billerica.ma.us>
Date: Thu, 11 Nov 1999 08:45:24 -0500
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-48934-1999.11.11-07.58.46--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

http://www.allnetdevices.com/news/9911/991109qualcomm/991109qualcomm.html

it's a story about the Qualcomm 2 Mbps local loop replacement.

--- eric

Eric S Johansson   esj@inguide.com   esj@harvee.billerica.ma.us
This message was composed using NaturallySpeaking.

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

18. [ss] Re: Coding to beat turbo codes.

From: Jake Janovetz <janovetz@tempest.ece.uiuc.edu>
Date: Thu, 11 Nov 1999 09:01:33 -0600
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-48951-1999.11.11-09.15.37--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

> > Why not public domain then? Well, again, for the simple reason
> > that I don't think anyone else has the right to profit from my work.
> > If I want to profit that's my own choice, but I don't want to give
> > someone else the right to profit from it.
>
> Maybe you didn't understand what Brett meant then. Its basically exactly
> what you are saying..... denying others the ability to profit from your
> work.... i.e. "Monkey wrenching".

No, only if you consider it "monkey wrenching" into the machine of
theft. You see, I'm not denying anyone the ability to make a profit
from _THEIR_ work, but there's no way in hell I'm going to volunteer
my work and let them make money from it.

What I think he is getting at is that GPL people are competing in a
manner which puts for-profit companies out of business. That is,
providing a product that is just as good as the expensive one -- for
free. Perhaps that's the motive for some people, but that's not
my motive. And, I don't think it is to be inferred from the GPL license.

   Cheers,
   Jake

--
   janovetz@uiuc.edu | How can it be that mathematics, being after all a
 University of Illinois | product of human thought independent of experience,
                        | is so admirably adapted to the objects of reality?
        PP-ASEL | - Albert Einstein

Disclaimer: The policies of this University certainly do not reflect my

own opinions, objectives, or agenda.

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

19. [ss] Re: Coding to beat turbo codes.

From: "Vazquez, Miguel" <Miguel.Vazquez@iusacell.com.mx>
Date: Thu, 11 Nov 1999 11:21:02 -0600
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-48998-1999.11.11-12.23.57--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

This is a mail list for SPREAD SPECTRUM TECHNOLOGIES
I think you need to write in another place (for software developers)
Thank you!!
(I don't want to known NOTHING about GPL or whatever it;s...)

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

20. [ss] Re: anything more to this than hype?

From: "Jeff Millar" <jeff@wa1hco.mv.com>
Date: Thu, 11 Nov 1999 21:43:10 -0500
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-49078-1999.11.11-21.05.57--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

>From a quick look at Qualcomm's site, it looks like they use the standard CDMA cellphone spread spectrum chipping rate (at 1.25 MHz bw that supports mobile, long range, cell phones) but use the chips for data instead of processing gain. They probably transmit about 1 chip per bit instead of lots of chips per bit. But as the signal gets weaker, they probably increase the number of chips per bit to get back some processing gain. The algorithm may also have increased the number of phase/amplitude levels per chip since they can assume better SNR.

This approach probably operates at lower power, with shorter range and with less multipath handling.

The industry is developing a lot of these kind of things to enable people to roam around campuses, airports, etc while using laptops, palm computing, etc connected to a network. The algorithms assume very small cells, slowly changing multipath environment, walking speeds or fixed operation. A lot of approaches assume asymetrical bandwidth...fast to the terminal, slow from terminal...saves battery.

Who knows which of these approaches will succeed, but a couple will.

My personal opinion is that frequency hopped approaches have some advantages over spread spectrum at this time for battery operated devices. Time will tell.

jeff

----- Original Message -----
From: Eric S. Johansson <esj@harvee.billerica.ma.us>
To: TAPR Spread Spectrum Special Interest Group <ss@lists.tapr.org>
Sent: Thursday, November 11, 1999 8:45 AM
Subject: [ss] anything more to this than hype?

> http://www.allnetdevices.com/news/9911/991109qualcomm/991109qualcomm.html
>
> it's a story about the Qualcomm 2 Mbps local loop replacement.
>
> --- eric
>
> Eric S Johansson esj@inguide.com esj@harvee.billerica.ma.us
> This message was composed using NaturallySpeaking.
>
>
> ---
> You are currently subscribed to ss as: JEFF@WA1HCO.MV.COM
> To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org
>
>

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

21. [ss] Re: Coding to beat turbo codes.

From: Brett Glass <brett@lariat.org>
Date: Thu, 11 Nov 1999 22:15:43 -0700
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-49142-1999.11.11-23.29.13--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

At 08:03 AM 11/11/1999 -0500, Eric S. Johansson wrote:

>Irrational avoidance of the GPL or any discussion thereof should be taken
>to the gnu newsgroups.

It's very rational to avoid the GPL.

>   for a better understanding of what the GPL really is about, I suggest
> folks read the document for themselves. You can find more information at
> http://www.gnu.org.

At that site, you will find misleading propaganda and rhetoric rather than
an honest account of the history of the GPL and its effects.

>If you want to read more of Bretts arguments you can find them at:
>http://www.cptech.org/altos/brett.html

This is a poor choice. The page cited just above is a series of randomly
selected quotes from a few of my postings to one mailing list. It was
compiled by a GPL zealot who hoped to trivialize arguments against this
destructive license.

--Brett Glass

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

22. [ss] Re: Coding to beat turbo codes.

From: Brett Glass <brett@lariat.org>
Date: Thu, 11 Nov 1999 22:29:07 -0700
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-49147-1999.11.11-23.42.44--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

At 09:01 AM 11/11/1999 -0600, Jake Janovetz wrote:

 >> Maybe you didn't understand what Brett meant then. Its basically exactly
> > what you are saying..... denying others the ability to profit from your
> > work.... i.e. "Monkey wrenching".
>
>No, only if you consider it "monkey wrenching" into the machine of
>theft. You see, I'm not denying anyone the ability to make a profit
>from _THEIR_ work, but there's no way in hell I'm going to volunteer
>my work and let them make money from it.

You don't understand, then. If you have already given away your work
for free, then no one can make money from it as-is, because it's
already available for free! To make money from it, someone must add
value -- and any money that person makes will be solely the result
of that added value. What's more, they'll probably have to add a LOT
of value to convince anyone not to go with the free version. That's
quite a handicap to start with already.

Adding a "poison pill" is nothing but spite.

--Brett Glass

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To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

23. [ss] Re: Coding to beat turbo codes.

From: Phil Karn <karn@qualcomm.com>
Date: Fri, 12 Nov 1999 00:41:07 -0800 (PST)
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Cc: ss@lists.tapr.org,
"karn@qualcomm.com"
<LYR4948-48842-1999.11.10-21.59.19--KARN#QUALCOMM.COM@lists.tapr.org>
(message from Brett Glass on Wed, 10 Nov 1999 20:45:52 -0700)
Message-ID: <LYR6751-49171-1999.11.12-02.54.41--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

>The matter goes beyond politics, by the way. The GPL is "monkey wrenching,"
>plain and simple -- an attempt to sabotage businesses.

Well, Red Hat is just one business among many that seems to thrive on
GPL software quite nicely, thank you very much.

My opinion, based on a decade and a half of personal experience in
writing software for amateur users, and in watching the experience of
others, is that the GPL is the *only* way to go for such volunteer
projects. There are many reasons:

1. Open source software benefits significantly from the increased
opportunity for others to find and fix bugs, add new features, and
port it to other platforms.

2. Opening your source code greatly increases its educational value to
the amateur community. Ham radio is now all but irrelevant in
emergency communcations due to cell and satellite phones, to enhancing
international goodwill (due to the Internet) and in advancing the
radio art (ham radio is now about 20-30 years behind the state of the
art, and falling back fast). So the one way that ham radio can still
make a contribution is in its opportunities for personal technical
education and training. And one of the best ways to learn is to take
things apart and see how they're built. When I got into electronics
and ham radio, I studied every schematic I could get my hands
on. Today, the real action is in software. And source code is to
software what a schematic is to hardware.

3. Releasing code under the GPL, as opposed to just releasing it to
the public domain, appeals to a lot of authors (like me) who want to
help other hams but who don't want to be exploited by those who would
make some minor enhancement and take my work proprietary. And in a
group effort, having everyone agree to the GPL ahead of time assures
everyone that nobody will be in a position to exploit the work of the
others somewhere down the line. Nothing destroys the camaraderie of a
group of idealistic volunteers faster than money.

Nobody says that you *must* release any code you write under the GPL.
It's your personal decision. But if you're sincerely interested in
maximizing your benefit to the amateur cause, then the GPL is the way
to go.

Phil

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

24. [ss] Re: Coding to beat turbo codes.

From: "Darnell Gadberry" <darnell@binmedia.com>
Date: Fri, 12 Nov 1999 01:40:00 -0800
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-49174-1999.11.12-03.54.16--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Bret,

I learned much about the inner-workings of TCP/IP from reading and analyzing
Phil's GPL'd code. Without talented software engineers like Phil who are
willing to release their intellectual property into the public domain, I
seriously doubt that the Internet and general PC industry would have
achieved the incredible growth that we have witnessed over the past 6 - 10
years.

If you find the idea of software released under the GPL completely
unpaletable, you are certainly free not to use it. However, it just strikes
me as more than a little childish that you would waste so much mental energy
on an issue which is globally just not that important. I have worked as a
commercial software developer for over 16 years (Apple, Electronic Arts,
DEC, Pastel Development, Cobalt Networks) and needless to say, I am

generally very concerned about any trend that woud potentially deprive me of my livelyhood. I do not feel in the least bit threatened by software released under the GPL; why should you?

Perhaps, we can now move onto more substantial topics like coercing Phil to help us (TAPR) design an inexpensive and flexible hand-held 1.2 GHz spread-spectrum radio.

- darnell

Darnell Gadberry KE6UCL
President, binaryMedia Communications
Contributing Editor, CMP Media, Inc./Byte.com
darnell@binmedia.com

-----Original Message-----
From: bounce-ss-4827@lists.tapr.org
[mailto:bounce-ss-4827@lists.tapr.org]On Behalf Of Phil Karn
Sent: Friday, November 12, 1999 12:41 AM
To: TAPR Spread Spectrum Special Interest Group
Cc: ss@lists.tapr.org; karn@qualcomm.com (message from Brett Glass on Wed, 10 Nov 1999 20:45:52 -0700)
Subject: [ss] Re: Coding to beat turbo codes.

>The matter goes beyond politics, by the way. The GPL is "monkey wrenching,"
>plain and simple -- an attempt to sabotage businesses.

Well, Red Hat is just one business among many that seems to thrive on GPL software quite nicely, thank you very much.

My opinion, based on a decade and a half of personal experience in writing software for amateur users, and in watching the experience of others, is that the GPL is the *only* way to go for such volunteer projects. There are many reasons:

1. Open source software benefits significantly from the increased opportunity for others to find and fix bugs, add new features, and port it to other platforms.

2. Opening your source code greatly increases its educational value to the amateur community. Ham radio is now all but irrelevant in emergency communcations due to cell and satellite phones, to enhancing international goodwill (due to the Internet) and in advancing the radio art (ham radio is now about 20-30 years behind the state of the art, and falling back fast). So the one way that ham radio can still make a contribution is in its opportunities for personal technical education and training. And one of the best ways to learn is to take things apart and see how they're built. When I got into electronics and ham radio, I studied every schematic I could get my hands on. Today, the real action is in software. And source code is to software what a schematic is to hardware.

3. Releasing code under the GPL, as opposed to just releasing it to the public domain, appeals to a lot of authors (like me) who want to help other hams but who don't want to be exploited by those who would make some minor enhancement and take my work proprietary. And in a group effort, having everyone agree to the GPL ahead of time assures everyone that nobody will be in a position to exploit the work of the others somewhere down the line. Nothing destroys the camaraderie of a group of idealistic volunteers faster than money.

Nobody says that you *must* release any code you write under the GPL. It's your personal decision. But if you're sincerely interested in maximizing your benefit to the amateur cause, then the GPL is the way to go.

Phil

You are currently subscribed to ss as: DARNELL@BINMEDIA.COM
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

---
You are currently subscribed to ss as: lyris.ss@tapr.org

To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

25. [ss] Re: Coding to beat turbo codes.

From: Robert McGwier <rwmcgwier@home.com>
Date: Fri, 12 Nov 1999 07:05:03 -0500
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-49182-1999.11.12-06.18.44--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Can you please at least change the subject of this off topic thread?
I would like to add it to my filters!

Bob

At 10:29 PM 11/11/1999 -0700, you wrote:
>At 09:01 AM 11/11/1999 -0600, Jake Janovetz wrote:
>
> >> Maybe you didn't understand what Brett meant then. Its basically exactly
>> > what you are saying..... denying others the ability to profit from your
>> > work.... i.e. "Monkey wrenching".
>>
>>No, only if you consider it "monkey wrenching" into the machine of
>>theft. You see, I'm not denying anyone the ability to make a profit
>>from _THEIR_ work, but there's no way in hell I'm going to volunteer
>>my work and let them make money from it.
>
>You don't understand, then. If you have already given away your work
>for free, then no one can make money from it as-is, because it's
>already available for free! To make money from it, someone must add
>value -- and any money that person makes will be solely the result
>of that added value. What's more, they'll probably have to add a LOT
>of value to convince anyone not to go with the free version. That's
>quite a handicap to start with already.
>
>Adding a "poison pill" is nothing but spite.
>
>--Brett Glass
>
>
>
>---
>You are currently subscribed to ss as: RWMCGWIER@HOME.COM
>To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

---
You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

26. [ss] Re: twisting phil's arm.

From: "Eric S. Johansson" <esj@harvee.billerica.ma.us>
Date: Fri, 12 Nov 1999 08:48:57 -0500
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-49192-1999.11.12-08.02.26--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

At 04:40 AM 11/12/1999 , you wrote:
>Perhaps, we can now move onto more substantial topics like coercing Phil to
>help us (TAPR) design an inexpensive and flexible hand-held 1.2 GHz
>spread-spectrum radio.

interesting idea. maybe they have an eval board we can start with.

--- eric
Eric S Johansson   esj@inguide.com   esj@harvee.billerica.ma.us
This message was composed using NaturallySpeaking.

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

27. [ss] Re: Coding to beat turbo codes.

From: Brett Glass <brett@lariat.org>
Date: Fri, 12 Nov 1999 08:56:18 -0700
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Cc: ss@lists.tapr.org
Message-ID: <LYR6751-49211-1999.11.12-10.10.07--lyris.ss#tapr.org@lists.tapr.org>

At 12:41 AM 11/12/1999 -0800, Phil Karn wrote:

>Well, Red Hat is just one business among many that seems to thrive on
>GPL software quite nicely, thank you very much.

Interestingly, Richard Stallman and other GPL boosters have frequently
called Red Hat "parasites."

The fact, however, is that Red Hat's product is not software. It does
not own the GPLed software and therefore cannot license or resell it.
What it actually sells are tech support, plastic disks (primarily as
a substitute for bandwidth), and warm fuzzies. (The fact that they are
a company with a large market cap makes corporate folks feel more
comfortable buying the product.)

In short, they are selling everything BUT the software.

And this is one of the biggest problems with the GPL: It undermines
the livelihoods of programmers, while continuing to allow those
who do not create the software -- the packagers, marketers, and
managers -- to profit.

Under a license which permits commercial reuse of the code, such
as the MIT X or BSD license, the programmer can build upon what
already exists and be properly compensated for his or her work.
This is not true under the GPL, which attempts to force him or
her to give away the work with no prospect whatsoever of adequate
compensation.

The GPL is an attempt to turn open source into a weapon against
programmers' livelihoods.

>My opinion, based on a decade and a half of personal experience in
>writing software for amateur users, and in watching the experience of
>others, is that the GPL is the *only* way to go for such volunteer
>projects. There are many reasons:
>
>1. Open source software benefits significantly from the increased
>opportunity for others to find and fix bugs, add new features, and
>port it to other platforms.

You are confusing the GPL with "open source." In fact, the GPL does not
conform to the accepted definition of an open source license (the "OSD")
as posted at http://www.opensource.org/osd.html. Why? Because it
discriminates against a field of endeavor: the creation, publication,
and licensing of commercial software.

Confusing the GPL with an open source license is a common
mistake which, alas, the proponents of the GPL encourage. Linus
Torvalds licensed Linux under the GPL primarily because he was
unaware that other options existed and were better; he also did
not, at the time, understand the full implications of the GPL.
While Linus still advocates open source, he downplays the GPL (it's
too late, alas, for him to change the licensing of Linux due to the
GPL's lock-in and viral effects) and in fact balks at the
anti-business attitudes of many of its supporters.

There are many licenses other than the GPL which DO conform to the
OSD and do not share the GPL's spiteful motivation and deleterious
effects.

>2. Opening your source code greatly increases its educational value to
>the amateur community.

Yes, open source is valuable. The GPL, however, does not merely
destroy much of the value of open source -- it turns it into a
vehicle for a destructive agenda.

>3. Releasing code under the GPL, as opposed to just releasing it to
>the public domain, appeals to a lot of authors (like me) who want to
>help other hams but who don't want to be exploited by those who would
>make some minor enhancement and take my work proprietary.

"Taking the work proprietary" cannot be effectively done via a minor
enhancement, because unless the enhancements have substantial value there
will be no market for the enhanced product. If substantial enhancements
ARE added, all of the market value of the enhanced product will stem
from the enhancements, since the market value of the unenhanced product

is necessarily zero (it is available for free).

The use of open source to build a commercial product does not
constitute "exploitation" any more than reducing the work of scientists
and researchers to practice is "exploiting" them. The ability of
engineers to build upon existing work rather than needlessly re-implementing
the wheel is key to the advancement of the state of the art. A good
example: the rise of the Internet is almost entirely due to the free
availability of the Berkeley (BSD) TCP/IP stack, originally implemented
within Berkeley UNIX. Had this code been released under the GPL, private
companies would have had no incentive to adopt it. (The same is true of
BIND and other key utilities which make the Internet work.) Absent the
standardization provided by this key body of source code, the Internet
and TCP/IP would not be ubiquitous, as they are today.

The GPL throws a monkey wrench into the process by preventing programmers
from building on one another's work. This causes less standardization
and more balkanization. In addition, because programmers who seek to advance
the state of the art must reimplement what has already been done, they
start at a disadvantage. The result: creative work is hobbled -- for the
sake of Richard Stallman's spite against those who seek to make even a
modest living from their efforts.

>And in a
>group effort, having everyone agree to the GPL ahead of time assures
>everyone that nobody will be in a position to exploit the work of the
>others somewhere down the line. Nothing destroys the camaraderie of a
>group of idealistic volunteers faster than money.

The use of the GPL is not at all a precondition for cooperation in a group
effort. The FreeBSD, OpenBSD, and NetBSD projects -- as well as BIND and
Apache -- all allow anyone to make free use of the code. These open source
projects are flourishing.

Before one rubber-stamps the GPL onto one's code, it pays to stop and think.
Do you really want to endorse the spiteful agenda of Richard Stallman, who
crafted the GPL out of resentment when engineers sought to develop concepts
developed in the MIT AI lab into useful products? Do you want to prevent code
from being shared and re-used? Do you want to destroy markets and livelihoods?
If you want to make a positive contribution to the programming community and the
world of open source, do not choose the GPL, which does not even conform to the
OSD (the generally accepted definition of open source). Instead, opt instead
for the BSD license, the MIT X license, or a similar license that permits your
colleagues to build on what you've done. You, in turn, will benefit from their
work, and all will have an opportunity to benefit from their efforts.

--Brett Glass

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

28. [ss] Re: Coding to beat turbo codes.

From: Brett Glass <brett@lariat.org>
Date: Fri, 12 Nov 1999 09:02:15 -0700
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-49212-1999.11.12-10.15.51--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

At 01:40 AM 11/12/1999 -0800, Darnell Gadberry wrote:

>I learned much about the inner-workings of TCP/IP from reading and analyzing
>Phil's GPL'd code.

Perhaps. But are you aware that, if you ever write a commercial product which
involves TCP/IP, Richard Stallman's "Free Software Foundation" could claim that
it was derivative of GPLed code and that you therefore had to give all of
the source away for free? (This "tainting" effect is the reason why reverse
engineering is usually done in a "clean room" environment.)

>Without talented software engineers like Phil who are
>willing to release their intellectual property into the public domain, I
>seriously doubt that the Internet and general PC industry would have
>achieved the incredible growth that we have witnessed over the past 6 - 10
>years.

I think that releasing code into the public domain is wonderful -- as is
releasing it under a true open source license. What is harmful is releasing

the code under the GPL's "poison pill" license, whose purpose is to prevent
programmers from building upon one another's work and making a living by
doing so. The GPL's anti-business, anti-programmer provisions were motivated
by spite and not at all by a spirit of cooperation and sharing.

Many people are, alas, not aware of the long-term effects of the GPL nor of the
motivation behind it.

--Brett Glass

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

29. [ss] Re: Coding to beat turbo codes.

From: "Lyle Johnson" <johnson@mmsi.com>
Date: Fri, 12 Nov 1999 10:03:04 -0700
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-49228-1999.11.12-11.08.20--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I'm not a software guy, but I agree 100% with Phil on this one. It was the
equivalent of this attitude that allowed TAPR to make a signficiant
contribution to Amateur Radio back in the 80s with the TNC project(s). AEA
made enough money from it all for Mike Lamb to retire, and many participants
in those early efforts obtained excellent employment in part through their
volunteer activities.

> ...
> My opinion, based on a decade and a half of personal experience in
> writing software for amateur users, and in watching the experience of
> others, is that the GPL is the *only* way to go for such volunteer
> projects. There are many reasons:
> ...

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

30. [ss] Re: Coding to beat turbo codes.

From: Brett Glass <brett@lariat.org>
Date: Fri, 12 Nov 1999 10:47:46 -0700
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-49240-1999.11.12-12.01.22--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

At 10:03 AM 11/12/1999 -0700, Lyle Johnson wrote:

>I'm not a software guy, but I agree 100% with Phil on this one.

Phil's attitude that the sharing of code is good is correct, and I
support it. However, by using the GPL on some of his code, he has
actually prevented it from being shared.

In the world of radio, standards are crucially important. Unfortunately,
the GPL contains a "poison pill" which prevents commercial re-use of
the code. For this reason, it deters standardization. Commercial
equipment manufacturers cannot standardize on the publicly available
code base; they must either re-engineer it (a process which is likely
to introduce incompatibilities) or develop their own incompatible schemes.

This serious problem can be prevented if a true open source license --
such as the BSD or MIT X license -- is used instead of the GPL. (As stated
in an earlier message, the GPL does not meet the criteria for an open source
license because it discriminates against any field of endeavor which
involves the creation and licensing of commercial software. This includes
not only software for personal computers but also embedded systems.)

> It was the
>equivalent of this attitude that allowed TAPR to make a signficiant
>contribution to Amateur Radio back in the 80s with the TNC project(s). AEA
>made enough money from it all for Mike Lamb to retire, and many participants
>in those early efforts obtained excellent employment in part through their
>volunteer activities.

In that case, you should advocate the use of true open source licenses, rather
than the GPL, by those who contribute to the development of amateur radio

software.

--Brett

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

31. [ss] GPL no good for small businesses (was re: Coding to beat turbo codes)

From: Jeff King <jeff@aerodata.net>
Date: Fri, 12 Nov 1999 13:48:01 -0500
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Cc: Lyle Johnson <johnson@mmsi.com>, Brett Glass <brett@lariat.org>,
Darnell Gadberry <darnell@binmedia.com>
Message-ID: <LYR6751-49256-1999.11.12-12.59.53--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I'll keep this brief as I can.

Phil Karn wrote:

> >The matter goes beyond politics, by the way. The GPL is "monkey wrenching,"
> >plain and simple -- an attempt to sabotage businesses.
>
> Well, Red Hat is just one business among many that seems to thrive on
> GPL software quite nicely, thank you very much.

Red Hat is a publishing company. Its not a fair comparison to what Brett
was referring to.

> My opinion, based on a decade and a half of personal experience in
> writing software for amateur users, and in watching the experience of
> others, is that the GPL is the *only* way to go for such volunteer
> projects. There are many reasons:

Not picking on you Phil, but the GPL folks always try to pull this off
topic to suite their agenda. Brett was not talking about volunteer
use if you check his original message. He was referring to use by
for profit businesses.

Your examples re-affirm what Brett was saying about the GPL
and its "poison pill" for use by for profit businesses. Certainly
a GPL's authors choice, but lets call it what it is.

-Jeff

Brett Glass stated:

>The matter goes beyond politics, by the way. The GPL is "monkey wrenching,"
>plain and simple -- an attempt to sabotage businesses.
>
>--Brett

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

32. [ss] Re: GPL no good for small businesses (was re: Coding to beat turbo codes)

From: "Hamoperator SM7UGT Marcel bos" <sm1ugt@hotmail.com>
Date: Fri, 12 Nov 1999 11:08:52 PST
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-49265-1999.11.12-13.22.20--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Sorry this is wayout of topic but:
The computer age turned for a new way to watch on the word economy.
What we create on them today is a emulation on past years, trying
to learn them economic rules.

The technology itself has edvidence that it can work in an anarchy
and so will also the echonomy develop in the future.

What shall we live on? - how shall we pay our houses.. And Giving the
children something to play with. That qestion bathers alot I know, maybe
with - something else - something we havn't thougt on. A qestion that realy
escalates is that each one of us has a given time, and soner or later one
will end up with a black stone. My dear friend: what counts? And who do we

make a solotion to find as much
time as possbile for ourselfs.. And this - in a time when we hunt it -
because we need it - because we must earn acording to the old system money..
because someone else realy needs em, in third and sexth person realy needs
em. My qestion is: how can the sun burn
hard without getting paid? The sun and windpower Idea drives me
in qestions how to invent systems where money dosn't exist and
aren't needed.

I create because I love to create - thats my reason. And i am not
thinking about money this money that. I just want to be with in
my creative flow..

>From: Jeff King <jeff@aerodata.net>
>Reply-To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
>To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
>CC: Lyle Johnson <johnson@mmsi.com>, Brett Glass <brett@lariat.org>,
>Darnell Gadberry <darnell@binmedia.com>
>Subject: [ss] GPL no good for small businesses (was re: Coding to beat
>turbo codes)
>Date: Fri, 12 Nov 1999 13:48:01 -0500
>MIME-Version: 1.0
>From bounce-ss-4919@lists.tapr.org Fri Nov 12 10:47:02 1999
>Return-Path: <jeff@aerodata.net>
>Errors-To: <jeff@aerodata.net>
>Message-ID:
><LYR4919-49256-1999.11.12-12.59.53--SM1UGT#HOTMAIL.COM@lists.tapr.org>
>Organization: Aero Data Systems, Inc.
>X-Accept-Language: en
>References:
><LYR9838-49171-1999.11.12-02.54.41--jeff#aerodata.net@lists.tapr.org>
>List-Unsubscribe: <mailto:leave-ss-6751T@lists.tapr.org>
>List-Software: Lyris Server version 3.0
>List-Subscribe: <mailto:subscribe-ss@lists.tapr.org>
>List-Owner: <mailto:owner-ss@lists.tapr.org>
>X-List-Host: Tucson Amateur Packet Radio <http://www.tapr.org>
>X-Message-Id: <382C60E1.AA869A77@aerodata.net>
>Sender: bounce-ss-4919@lists.tapr.org
>Precedence: bulk
>
>I'll keep this brief as I can.
>
>Phil Karn wrote:
>
> > >The matter goes beyond politics, by the way. The GPL is "monkey
>wrenching,"
> > >plain and simple -- an attempt to sabotage businesses.
> >
> > Well, Red Hat is just one business among many that seems to thrive on
> > GPL software quite nicely, thank you very much.
>
>Red Hat is a publishing company. Its not a fair comparison to what Brett
>was referring to.
>
> > My opinion, based on a decade and a half of personal experience in
> > writing software for amateur users, and in watching the experience of
> > others, is that the GPL is the *only* way to go for such volunteer
> > projects. There are many reasons:
>
>Not picking on you Phil, but the GPL folks always try to pull this off
>topic to suite their agenda. Brett was not talking about volunteer
>use if you check his original message. He was referring to use by
>for profit businesses.
>
>Your examples re-affirm what Brett was saying about the GPL
>and its "poison pill" for use by for profit businesses. Certainly
>a GPL's authors choice, but lets call it what it is.
>
>-Jeff
>
>Brett Glass stated:
>
> >The matter goes beyond politics, by the way. The GPL is "monkey
>wrenching,"
> >plain and simple -- an attempt to sabotage businesses.
> >
> >--Brett

>
>
>
>---
>You are currently subscribed to ss as: SM1UGT@HOTMAIL.COM
>To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org
>
>

_____
Get Your Private, Free Email at http://www.hotmail.com

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

33. [ss] RE: GPL no good for small businesses

From: "Darnell Gadberry" <darnell@binmedia.com>
Date: Fri, 12 Nov 1999 11:12:50 -0800
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-49268-1999.11.12-13.29.37--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Everyone please repeat after me:

        Radio, radio, radio, radio.

The GPL issue is clearly a major hot-button for a number of TAPR members.
Rather than continuing to degrade that already low S/N ratio of this list
with further religious wars about a topic that NONE OF US WILL BE ABLE TO
RESOLVE in this forum. Let's put the GPL issue to bed or better yet,
convince Greg (WD5IVD) to create another list where the discussion of the
GLP topic can be continued by those who are (rightfully) passionate about
their positions.

So, has anyone looked at the Bluetooth (http://www.bluetooth.com)
specification for wireless devices and assessed its applicability to Amateur
applications?

- darnell

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

34. [ss] TAPR and GPL

From: Brett Glass <brett@lariat.org>
Date: Fri, 12 Nov 1999 12:34:25 -0700
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-49272-1999.11.12-13.48.18--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

At 11:12 AM 11/12/1999 -0800, Darnell Gadberry wrote:

>Everyone please repeat after me:
>
>   Radio, radio, radio, radio.
>
>The GPL issue is clearly a major hot-button for a number of TAPR members.
>Rather than continuing to degrade that already low S/N ratio of this list
>with further religious wars about a topic that NONE OF US WILL BE ABLE TO
>RESOLVE in this forum.

Actually, there is something that could be done here which would enhance
the effectiveness of amateur radio software projects and encourage
standardization.

TAPR should take a formal stance in favor of using open source licensing
(that is, the MIT X license or the BSD license -- NOT the GPL) for
the output of collaborative amateur radio software projects. By doing so,
it would ensure that commercial equipment which embodies the pioneering work
done in these projects would be readily available, and also that manufacturers
would not be forced, by restrictive licenses, to create incompatible hardware.
Since the development of standards is important, and not every ham builds all
of his or her own equipment from scratch, such a policy would have very
positive effects.

I'd like to see the members of this forum endorse such a policy and bring
it up for formal adoption by the group.

--Brett Glass

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

35. [ss] Re: Coding to beat turbo codes.

From: "Lyle Johnson" <johnson@mmsi.com>
Date: Fri, 12 Nov 1999 12:51:36 -0700
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-49274-1999.11.12-13.56.49--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Bret,

I am neither for or against GPL. I am for open-ness and sharing. This is
the wrong place to have a discussion on the merits of the GPL, IMHO.

Lyle

> In that case, you should advocate the use of true open source
> licenses, rather
> than the GPL, by those who contribute to the development of amateur radio
> software.

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

36. [ss] RE: TAPR and GPL

From: "Lyle Johnson" <johnson@mmsi.com>
Date: Fri, 12 Nov 1999 12:52:52 -0700
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-49275-1999.11.12-13.58.06--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

wrong forum.

> I'd like to see the members of this forum endorse such a policy and bring
> it up for formal adoption by the group.
>
> --Brett Glass

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

37. [ss] RE: TAPR and GPL

From: "Darnell Gadberry" <darnell@binmedia.com>
Date: Fri, 12 Nov 1999 11:43:17 -0800
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-49276-1999.11.12-14.00.22--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Bret,

Why don't you draft a resolution on your GPL stance, create a web site that
FAIRLY discusses the pros and cons of both sides of the issue and proposes
suggestions for how TAPR should (if appropriate) stand on this issue? You
could then draft a position paper which TAPR could submit to the membership
for consideration. Let the membership decide if we should take an
organizational stance on the GPL issue.

I would be willing to donate the web space, discussion forums and access to
my listserv to you or any other TAPR member who has legitimate isssues to
discuss of relevance to the Amateur Radio community.

- darnell

-----Original Message-----
From: bounce-ss-4827@lists.tapr.org
[mailto:bounce-ss-4827@lists.tapr.org]On Behalf Of Brett Glass
Sent: Friday, November 12, 1999 11:34 AM
To: TAPR Spread Spectrum Special Interest Group

Subject: [ss] TAPR and GPL

At 11:12 AM 11/12/1999 -0800, Darnell Gadberry wrote:

>Everyone please repeat after me:
>
>   Radio, radio, radio, radio.
>
>The GPL issue is clearly a major hot-button for a number of TAPR members.
>Rather than continuing to degrade that already low S/N ratio of this list
>with further religious wars about a topic that NONE OF US WILL BE ABLE TO
>RESOLVE in this forum.

Actually, there is something that could be done here which would enhance
the effectiveness of amateur radio software projects and encourage
standardization.

TAPR should take a formal stance in favor of using open source licensing
(that is, the MIT X license or the BSD license -- NOT the GPL) for
the output of collaborative amateur radio software projects. By doing so,
it would ensure that commercial equipment which embodies the pioneering work
done in these projects would be readily available, and also that
manufacturers
would not be forced, by restrictive licenses, to create incompatible
hardware.
Since the development of standards is important, and not every ham builds
all
of his or her own equipment from scratch, such a policy would have very
positive effects.

I'd like to see the members of this forum endorse such a policy and bring
it up for formal adoption by the group.

--Brett Glass

You are currently subscribed to ss as: DARNELL@BINMEDIA.COM
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

---
You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

38. [ss] RE: GPL no good for small businesses

From: Jeff King <jeff@aerodata.net>
Date: Fri, 12 Nov 1999 15:08:52 -0500
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-49279-1999.11.12-14.20.42--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Darnell Gadberry wrote:

> Everyone please repeat after me:
>
>   Radio, radio, radio, radio.

Maybe 30 years ago. Now its Radio, radio, radio & Software, software for
narrowband
gear and Radio, radio, radio & Software, software, software, software for SS
gear.

So like it or not, SOFTWARE is an issue on a Spread Spectrum designers plate.

-Jeff

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

39. [ss] RE: GPL no good for small businesses

From: "Darnell Gadberry" <darnell@binmedia.com>
Date: Fri, 12 Nov 1999 12:07:59 -0800
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-49280-1999.11.12-14.25.25--lyris.ss#tapr.org@lists.tapr.org>

Rendered body type: text/plain

Fair Enough. But, how do we move this discussion onto issues of actually creating software. I would be THRILLED to participate in an intellectually stimulating discussion about creating software for Amateur Radio Applications.

- darnell

-----Original Message-----
From: bounce-ss-4827@lists.tapr.org
[mailto:bounce-ss-4827@lists.tapr.org]On Behalf Of Jeff King
Sent: Friday, November 12, 1999 12:09 PM
To: TAPR Spread Spectrum Special Interest Group
Subject: [ss] RE: GPL no good for small businesses

Darnell Gadberry wrote:

> Everyone please repeat after me:
>
> Radio, radio, radio, radio.

Maybe 30 years ago. Now its Radio, radio, radio & Software, software for narrowband gear and Radio, radio, radio & Software, software, software, software for SS gear.

So like it or not, SOFTWARE is an issue on a Spread Spectrum designers plate.

-Jeff

You are currently subscribed to ss as: DARNELL@BINMEDIA.COM
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

---
You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

40. [ss] RE: TAPR and GPL

From: Brett Glass <brett@lariat.org>
Date: Fri, 12 Nov 1999 13:13:31 -0700
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-49281-1999.11.12-14.27.09--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

At 12:52 PM 11/12/1999 -0700, Lyle Johnson wrote:

>wrong forum.

Is it really? I don't think so. Spread spectrum and packet radio are the two primary areas in which hams are collaboratively developing software.

--Brett

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

41. [ss] RE: TAPR and GPL

From: "Darnell Gadberry" <darnell@binmedia.com>
Date: Fri, 12 Nov 1999 12:18:47 -0800
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-49282-1999.11.12-14.36.16--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

So let's talk more about developing software for Amateur Radio and less about whether or not we should be distributing under the GPL.

- darnell

-----Original Message-----
From: bounce-ss-4827@lists.tapr.org

[mailto:bounce-ss-4827@lists.tapr.org]On Behalf Of Brett Glass
Sent: Friday, November 12, 1999 12:14 PM
To: TAPR Spread Spectrum Special Interest Group
Subject: [ss] RE: TAPR and GPL

At 12:52 PM 11/12/1999 -0700, Lyle Johnson wrote:

>wrong forum.

Is it really? I don't think so. Spread spectrum and packet radio are the two primary areas in which hams are collaboratively developing software.

--Brett

You are currently subscribed to ss as: DARNELL@BINMEDIA.COM
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

---
You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

42. [ss] RE: TAPR and GPL and SS radio

From: Jeff King <jeff@aerodata.net>
Date: Fri, 12 Nov 1999 15:40:37 -0500
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-49287-1999.11.12-14.52.26--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Lyle:

I happen to agree with Brett. And also would like you and others to consider some things here.

Lyle Johnson wrote:

> wrong forum.

Maybe not. Lets explore this a bit more. TAPR has been funding a SS radio project, which a large part of it, incorporates SOFTWARE.

Recently, we learned that TAPR had signed some sort of agreement with the "Dandin Group" to take the TAPR SS radio into production. This agreement is not available to TAPR membership. No information, that I could find, is available on the "Dandin Group". We simply don't know.

See: http://www.tapr.org/tapr/html/Ftaprfhss.html

Lyle Johnson wrote:

>I'm not a software guy, but I agree 100% with Phil on this one. It was the
>equivalent of this attitude that allowed TAPR to make a significant
>contribution to Amateur Radio back in the 80s with the TNC project(s). AEA
>made enough money from it all for Mike Lamb to retire, and many participants
>in those early efforts obtained excellent employment in part through their
>volunteer activities.

But do we *know* TAPR has the same attitude now towards the SS radio as they did towards the TNC2? From what little I can deduce, this is *NOT* the same attitude at all as TAPR displayed in the 1980's.

In the 1980's, TAPR made available both the TNC1 and TNC2 designs to *anyone* that would pay the licensing fee. This allowed competition in the open marketplace, and indeed, jump-started the packet revolution. Some TNC2 makers succeeded (PacComm, MFJ) while others fell by the wayside (GLB, DRSI). TAPR gave no-one any advantage and let the marketplace decide who would fail and who would succeed. This was brilliant on TAPR's part and those who were part of this decision should be commended.

Now, from what little we see, TAPR has assigned exclusive rights to Dandin for the SS radio. Dandin will market to the amateur community through TAPR. Do we know who Dandin is? If Dandin fails, will some other manufacturer step in and pick up the slack? Will competition with other TAPR SS radio manufacturers force Dandin to make the product at a competitive price? We just don't know.

So Lyle, I think Brett's suggestion, is very relevant for this group to

consider,
in particular for the SS radio. That is:

Brett Glass said:

>TAPR should take a formal stance in favor of using open source licensing
>(that is, the MIT X license or the BSD license -- NOT the GPL) for
>the output of collaborative amateur radio software projects. By doing so,
>it would ensure that commercial equipment which embodies the pioneering work
>done in these projects would be readily available, and also that manufacturers
>would not be forced, by restrictive licenses, to create incompatible hardware.
>Since the development of standards is important, and not every ham builds all
>of his or her own equipment from scratch, such a policy would have very
>positive effects.

Not having much information on the "Dandin deal" (and yes, I did ask), I fear
this may not be the success story the TNC2 was.

Regards,

Jeff

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

43. [ss] Re: Coding to beat turbo codes.

From: Robert McGwier <rwmcgwier@home.com>
Date: Fri, 12 Nov 1999 17:04:35 -0500
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-49301-1999.11.12-16.18.05--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

At 08:56 AM 11/12/1999 -0700, you wrote:
>At 12:41 AM 11/12/1999 -0800, Phil Karn wrote:
>
>>Well, Red Hat is just one business among many that seems to thrive on
>>GPL software quite nicely, thank you very much.
>
>Interestingly, Richard Stallman and other GPL boosters have frequently
>called Red Hat "parasites."
>
>The fact, however, is that Red Hat's product is not software. It does
>not own the GPLed software and therefore cannot license or resell it.
>What it actually sells are tech support, plastic disks (primarily as
>a substitute for bandwidth), and warm fuzzies. (The fact that they are
>a company with a large market cap makes corporate folks feel more
>comfortable buying the product.)
>
>In short, they are selling everything BUT the software.
>
>And this is one of the biggest problems with the GPL: It undermines
>the livelihoods of programmers, while continuing to allow those
>who do not create the software -- the packagers, marketers, and
>managers -- to profit.
>
>

WHY am I joining this? This is off topic and not appropriate for this
forum but . . . the last paragraph quoted here, especially as is related
to Red Hat is demonstrably false. The Red Hat Laboratories
does a LARGE amount of development for things associated with
Linux and the Red Hat distribution (Gnome for example) and they
give it <ALL> away under GPL.

PLEASE move this to an appropriate forum.

Bob

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To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

44. [ss] [ss]900 Mhz Webgear on Antennas

From: Tim Vaughn <tv@juno.com>
Date: Fri, 12 Nov 1999 14:42:34 -0800

To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Cc: ss@lists.tapr.org
Message-ID: <LYR6751-49313-1999.11.12-16.55.55--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

What would happen if you took a couple of the 900 Mhz. Webgear
spread-spectrum
cards (USB or parallel port) and connected them them to loop yagiis with
15 dB on each end ?

Could you go 10 miles ????

I know it is probably illegal or something, but just suppose......

Tim
(tv@juno.com)

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

45. [ss] Re: Coding to beat turbo codes.

From: Roland Burgan <rburgan@up.net>
Date: Fri, 12 Nov 1999 22:47:30 -0500
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-49347-1999.11.12-22.00.52--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I'm afraid this is going to be another tech group
that is more want-to-be, than know anything.
Sad, the good groups get fewer.

Lyle Johnson wrote:

> I'm not a software guy, but I agree 100% with Phil on this one. It was the
> equivalent of this attitude that allowed TAPR to make a signficiant
> contribution to Amateur Radio back in the 80s with the TNC project(s). AEA
> made enough money from it all for Mike Lamb to retire, and many participants
> in those early efforts obtained excellent employment in part through their
> volunteer activities.
>
> > ...
> > My opinion, based on a decade and a half of personal experience in
> > writing software for amateur users, and in watching the experience of
> > others, is that the GPL is the *only* way to go for such volunteer
> > projects. There are many reasons:
> > ...
>
> ---
> You are currently subscribed to ss as: rburgan@up.net
> To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

---
You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

46. [ss] bye!

From: "Lyle Johnson" <johnson@mmsi.com>
Date: Sat, 13 Nov 1999 00:44:41 -0700
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-49428-1999.11.13-01.49.58--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

This whole thing is getting tiresome, so I have just unsubscribed.

73,

Lyle

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

47. [ss] digital matched filter

From: Rethnakaran P <ratna@synopsys.COM>
Date: Sat, 13 Nov 1999 04:20:33 -0500
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-49432-1999.11.13-03.34.59--lyris.ss#tapr.org@lists.tapr.org>

Rendered body type: text/plain

hi,

  Can some one throw some details on the digital matched filter used
for despreading in spread spectrum. What are the issues in the design
of a digital matched filter, is there any novel scheme in which a
digital matched filter with superior performance can be achieved.
quantitatively how many multiplication and addition are there in a
typical matched filter despreader.is the acquisition time and the
spreadfactor are the only constraint in the digital matched filter.
Infact i have a lot of uncertainities about this digital matched
filter. could any of you come forward helping me in rectifying the
doubts.is there a fully programmable DMF(digital matched filter)
available in the market? if any of you have some papers or journals ,i
would be greatful to see it and grab.

Once again i thank you all and i appreciate your valuable time spending
towards my cause and i would be greatful to you for that

ratna

--
##
Up from Earth's centre through the Seventh Gate
I rose, and on the throne of Saturn sate,
And many knots unravel'd by the road;
But not the knot of human death and fate.

--Omar Khayyam
##

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

48. [ss] RE: bye!

From: bobbie Johnson <bobbiej@vnet.net>
Date: Sat, 13 Nov 1999 20:20:22 -0500
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-49566-1999.11.13-20.49.34--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

This group has just lost one of its most gifted and devoted members. Please
stop the crap before we loose the few remaining people that know what they
are doing.

Bobbie KD4LV

-----Original Message-----
From: Lyle Johnson [SMTP:johnson@mmsi.com]
Sent: Saturday, November 13, 1999 2:45 AM
To: TAPR Spread Spectrum Special Interest Group
Subject: [ss] bye!

This whole thing is getting tiresome, so I have just unsubscribed.

73,

Lyle

You are currently subscribed to ss as: BOBBIEJ@VNET.NET
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

---
You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

49. [ss] The Dandin Group

From: Jeff King <jeff@aerodata.net>
Date: Sat, 13 Nov 1999 21:52:58 -0500
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-49571-1999.11.13-21.04.43--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

As you may know, TAPR recently negotiated a deal with the Dandin Group
to finish and produce the spread spectrum radio. TAPR would be
able to sell through to the amateur market where as Dandin would sell
to the commercial market.

See: http://www.tapr.org/tapr/html/Ftaprfhss.html

I finally found some information on the Dandin Group company, and
thought I would pass it along, as I'm sure others may be interested.

Look at http://www.dandin.com/group.html for some familiar names
as well as   http://www.dandin.com   for more information on the
Dandin Group.

73

Jeff

http://www.dandin.com/group.html

About the Group:

 As an innovative leader in
 wireless internet access, the
 Dandin Group continues to
 push the technology to the
 new levels. We are dedicated
 to the belief that broadband
 wireless technology,
 particularly ultra wideband
 (UWB), is the best prospect
 for connecting the world and
 fulfilling the promise of the
 Internet.

About our Tag Line:

Wire free..
 ..Internet bound!
This restates our wireless
commitment to and through
the Internet.

 About our people:

 Dandin continues to attract some of the most talented visionaries in the field
of
 wireless technology to complement its team. Our people represent a broad range
 of experience in the communications industry ranging from packet radio,
 microwave technologies and artificial intelligence, to membership on the FCC's
 Technical Advisory Council. All team members have prior experience in
 launching profitable new ventures. Current members of note include: Dewayne
 Hendricks, Greg Jones, Stephen Ludvik, and Stephen Purcell.

 About our name:

 The original idea for the name Dandin came from the Redwall series of stories
 written by Brian Jacques. In these stories Dandin is a hero mouse. He is a
 peaceful, unassuming character who always rises to the occasion and comes to
 the aid of those in need. We thought this was a fitting role model! Other
 reference sources of the name include the lead character in the play "George
 Dandin" by Moliere, and "dandin" is the name of a dark pink variety of a
 Denziegner series New Guinea impatiens plant.

About our mascot:

Dani, a dolphin, is our mascot.
Unsurpassed in intelligent
communications using broadband
frequency waves, dolphins represent
the level of service we want to
provide!
Besides, we wanted a fun logo to put

on our hats and t-shirts!

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

50. [ss] Re: digital matched filter

From: Jeffrey Austen <jausten@tntech.edu>
Date: Mon, 15 Nov 1999 08:38:05 -0600
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-49919-1999.11.15-08.52.46--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Rethnakaran P <ratna@synopsys.COM> writes:
>Can some one throw some details on the digital matched filter used
>for despreading in spread spectrum. What are the issues in the design
>of a digital matched filter, ...

Traditionally, a correlator has been used for despreading. However if the
spreading code is relatively short, such as in the 802.11 systems, a
matched filter can also be used. The limiting factor is the relative
frequency error between the transmitter and receiver code generators; this
becomes more critical as the length of the code sequence increases. Given
the availability of precise frequency control and the (relative) ease and
low cost of putting a design into VLSI I expect that the matched filter
structure will become more common.

An excellent spread spectrum reference is "Introduction to Spread Spectrum
Communications" by Peterson, Ziemer and Borth.

Jeff, k9ja

Jeffrey Austen | Tennessee Technological University
jausten@tntech.edu | Box 5004
+1-931-372-3485 | Cookeville Tennessee 38505   U.S.A.

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

51. [ss] It's enough...

From: "Vazquez, Miguel" <Miguel.Vazquez@iusacell.com.mx>
Date: Mon, 15 Nov 1999 12:00:47 -0600
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-49980-1999.11.15-12.18.22--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

I really understand that software and telecommunications hardware are
working closer, but as I;m concern THIS is a forum for discuss Spread
Spectrum platforms, devices and applications, NOT software legalities, or
personal choices in using GPL *(whats that anyway??).
Excuse me, that's my personal oppinion...

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

52. [ss] Re: It's enough...

From: "R. Curry" <recurry@curry.org>
Date: Mon, 15 Nov 1999 12:07:14 -0800
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-49995-1999.11.15-14.23.21--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

Me too. Too many religous zealots clogging my inbox. I'll check back
sometime in the future when maybe the discussion goes back to technology and
SS. For now unsubscribing....

73's
Ron Curry

ke6wed

----- Original Message -----
From: Vazquez, Miguel <Miguel.Vazquez@iusacell.com.mx>
To: TAPR Spread Spectrum Special Interest Group <ss@lists.tapr.org>
Sent: Monday, November 15, 1999 10:00 AM
Subject: [ss] It's enough...

> I really understand that software and telecommunications hardware are
> working closer, but as I;m concern THIS is a forum for discuss Spread
> Spectrum platforms, devices and applications, NOT software legalities, or
> personal choices in using GPL *(whats that anyway??).
> Excuse me, that's my personal oppinion...
>
>
> ---
> You are currently subscribed to ss as: recurry@curry.org
> To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

---
You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

53. [ss] Re: It's enough...

From: "valantine nyenty" <vnchemty@hotmail.com>
Date: Tue, 16 Nov 1999 06:12:50 PST
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-50157-1999.11.16-08.26.27--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

More to that, When ever a novice comes in and asks for fondamental
information on spread spectrum systems, NO ONE CARES TO ANSWER HIM . This
shows that YOU ARE ALL VERY VERY VERY SELFISH AND NOT FIT TO ENTER THE NEW
MILLENIUM.
TRY AND HELP THE YOUNGER ONES WITH TECHNICAL FUNDAMENTAL INFORMATION ON
SPREAD SPECTRUM SYSTEMS DESIGN.!!!!!!!!!!!!!!!!

LET those who have eyes READ!!!!!!

>From: "Vazquez, Miguel" <Miguel.Vazquez@iusacell.com.mx>
>Reply-To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
>To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
>Subject: [ss] It's enough...
>Date: Mon, 15 Nov 1999 12:00:47 -0600
>
>I really understand that software and telecommunications hardware are
>working closer, but as I;m concern THIS is a forum for discuss Spread
>Spectrum platforms, devices and applications, NOT software legalities, or
>personal choices in using GPL *(whats that anyway??).
>Excuse me, that's my personal oppinion...
>
>
>---
>You are currently subscribed to ss as: vnchemty@hotmail.com
>To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org
>

_____
Get Your Private, Free Email at http://www.hotmail.com

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

54. [ss] Re: It's enough...

From: Jake Brodsky <frussle@erols.com>
Date: Tue, 16 Nov 1999 14:10:10 -0500
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-50223-1999.11.16-13.25.05--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

On Tue, 16 Nov 1999 06:12:50 PST, you wrote:

>More to that, When ever a novice comes in and asks for fondamental
>information on spread spectrum systems, NO ONE CARES TO ANSWER HIM . This
>shows that YOU ARE ALL VERY VERY VERY SELFISH AND NOT FIT TO ENTER THE NEW

>MILLENIUM.
>TRY AND HELP THE YOUNGER ONES WITH TECHNICAL FUNDAMENTAL INFORMATION ON
>SPREAD SPECTRUM SYSTEMS DESIGN.!!!!!!!!!!!!!!!

To a point, most on this list will. However, spread spectrum is a
complex topic in and of itself. If a newbie comes in and asks a very
broad question, I have no desire to type in a dissertation on the
subject.

This forum is for those who are attempting to help themselves. It is
not an online tutorial for those who are too cheap to buy a book and
take the time to read it.

Jake Brodsky, mailto:frussle@erols.com
"Nearly fifty percent of all graduates came from
the bottom half of the class."

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

55. [ss] Re: It's enough...

From: "James T. McCartney III" <jtm@skd.com>
Date: Tue, 16 Nov 1999 16:43:18 -0500
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Message-ID: <LYR6751-50245-1999.11.16-16.01.03--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain

OK, this thread has compelled me to finally post.

Yes, the number of newbies that come in and ask "what is ss?" does become
tiring. Maybe a FAQ is in order or a canned response to the FAQ that already
exists. That is certainly not too much.

As to the point of being too cheap to buy a book and read it, I have to
respond which one. The number of books about DSP is large. Many of the GOOD
ones (Oppenhiem, Schafer, Proakis, McClellen, Hamming etc.) are now
unfortunately out of print. Most all assume that you have a grounded
background in signals and are adding discrete time on top of the analog
cases. And yes, I did buy them...

Certainly most assume that you have already had the analog filters courses
and almost none that I have found discuss the practical applications and
present them in an algorithmic format. Most don't even explain the physics
of the math they present - just numbers and mathematical wizardry to prove
the value of the author to his department.

Yes, it's just software... but that's like saying the NOAA metrologic codes
or STRUDL structural codes are just software... without the background to
understanding them, it means nothing.

The thing that is missing is the equivalent of the Rosetta stone. There is
no cookbooks that enable the newbie to get started, no worked examples to
study and understand things like simple de/modulator techniques, filtering,
etc without 2 years of undergrad EE background to get started.

In ancient times, ACM has their collection of algorithms. DSP to my
knowledge never has had this luxury. Either the work was done for special
customers and thus unavailable, or was held close to the vest for fear that
one might compromise their competitive advantage. Too bad, the result is
good engineers who want to learn being shut out by those to insecure of
their talent to help them.

I, too, grow weary of this noise... good bye
James McCartney

-----Original Message-----
From: Jake Brodsky <frussle@erols.com>
To: TAPR Spread Spectrum Special Interest Group <ss@lists.tapr.org>
Date: Tuesday, November 16, 1999 2:12 PM
Subject: [ss] Re: It's enough...

>On Tue, 16 Nov 1999 06:12:50 PST, you wrote:
>
>>More to that, When ever a novice comes in and asks for fondamental
>>information on spread spectrum systems, NO ONE CARES TO ANSWER HIM . This
>>shows that YOU ARE ALL VERY VERY VERY SELFISH AND NOT FIT TO ENTER THE NEW

>>MILLENIUM.
>>TRY AND HELP THE YOUNGER ONES WITH TECHNICAL FUNDAMENTAL INFORMATION ON
>>SPREAD SPECTRUM SYSTEMS DESIGN.!!!!!!!!!!!!!!!!
>
>To a point, most on this list will. However, spread spectrum is a
>complex topic in and of itself. If a newbie comes in and asks a very
>broad question, I have no desire to type in a dissertation on the
>subject.
>
>This forum is for those who are attempting to help themselves. It is
>not an online tutorial for those who are too cheap to buy a book and
>take the time to read it.
>
>Jake Brodsky, mailto:frussle@erols.com
>"Nearly fifty percent of all graduates came from
>the bottom half of the class."
>
>---
>You are currently subscribed to ss as: JTM@SKD.COM
>To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org
>

You are currently subscribed to ss as: lyris.ss@tapr.org
To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org

December 1999

Original source file: ss.9912
Source: http://ftp.tapr.org/tapr_history/SIG_Archives/spread-spectrum-sig/mail_archive/ss.9912

1. [ss] Incremental phase modulator

```
From: Geoff Matthews <vk2tfg@ozemail.com.au>
Date: Mon, 27 Dec 1999 19:38:11 +1100
To: "TAPR Spread Spectrum Special Interest Group" <ss@lists.tapr.org>
Cc: ss@lists.tapr.org
Message-ID: <LYR6751-56831-1999.12.27-02.54.11--lyris.ss#tapr.org@lists.tapr.org>
Rendered body type: text/plain
```

Hi Guys,

I found the enclosed snippet on the web and it looks useful. Do any of
you know how I could go about implementing it? I have a CPLD "starter
kit" that I am learning to drive (slowly!!).

> Incremental Phase Modulator (IPM) -- simply use a clock that is 4 to 16 times the chip rate clock for the system digital timing reference in the receiver. Follow this clock with a programmable frequency divider, e.g. if the clock is 4 x the PN chip rate, use a divide by 3/4/5 counter. In the case of a clock at 8 x the PN chip rate, use a programmable 7/8/9 counter. Make sure this counter is controlled in such a way that it adds or drops only one input clock each time it is adjusted. This gives us single PN chip phase adjustment capability! Also, make sure that the counter can be advanced or retarded only once per data bit time (or one PN Epoch)! This scheme is especially useful in designs using FPGAs or planning to use custom ASICs, because it lends itself to simple, straightforward digital implementation.
> Note that, by proper design, ONLY advancing OR retarding of the PN chip phase is necessary -- but be careful of long term PN clock oscillator drifts!
>

73 de Geoff vk2tfg

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To unsubscribe send a blank email to leave-ss-6751T@lists.tapr.org